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ABSTRACT

Designed and implemented to improve the academic achievement of a predominantly Mexican American student body, this project of the Edgewood Independent School District in San Antonio, Texas, part of the Experimental Schools Program, attempted to improve the affective and cognitive environment of the students through encouraging the use of Spanish, adding culturally relevant materials to the curriculum, and enhancing pupil/teacher relationships. A study of classroom teacher behaviors initially employed very small samples of experimental and comparison students and was later expanded to larger groups to more fully document possible changes produced by the four-year program. The implementation of the program significantly changed neither the emotional climate scores nor teacher interpersonal style scores (mostly at low, positive levels), nor did it significantly raise scores for the measures above those found in the group of comparison classrooms. Measures of individualization of instruction, increasingly emphasized during the fourth year of the project, led to the tentative conclusion that training of teachers, enhanced by the appropriate materials, can bring about changes in instructional approaches. (JD)

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TEACHER CLASSROOM BEHAVIORS

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* * * *

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* * * *

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ABSTRACT

The experimental schools project of the Edgewood Independent School District, San Antonio, Texas, designed and implemented a special program under the auspices of the National Institute of Education to improve the academic achievement of its predominantly Mexican American student body. The project, called the Edgewood School Plan (ESP), attempted to improve the affective and cognitive environment of the students through encouraging the use of Spanish, adding culturally relevant materials to the curriculum, and enhancing pupil/teacher relationships. This latter included both the instructional techniques and classroom management.

The present report is one of a series produced under contract by the external evaluation team of Development Associates, Inc., as part of its research into the several aspects and results of the program. Specifically, the instrumentation utilized were the 2a version of the Observation Schedule and Record (OScAR 2a) for the first two years of the four year program, then a revision of portions of OScAR 2a (with project specific additions), termed the Modified Observation Schedule and Record (M/OScAR), for the last two years. The study paralleled other research for the first two years and employed very small samples of experimental and comparison students. Subsequently, the scope of the study was changed to more fully document possible changes produced by the program and the sample sizes were greatly enlarged. Classes were monitored for seven semesters by trained observers from spring 1973 through spring 1976.

The major findings for each dimension of the OScAR instruments included the following:

Emotional Climate

- The emotional climate measure scores were mostly at low, positive levels; few negative scores resulted.
- The experimental and comparison classrooms, as groups, were not different.
- The experimental and comparison elementary classrooms exhibited a nonsignificant parallel trend of increasing scores across the seven semesters; the middle and high school level scores did not show this trend.

Teacher Interpersonal Style

- The classroom scores were predominantly at low, positive levels; some negative scores resulted.
- The experimental and comparison groups of classrooms were not different.
- The experimental and comparison elementary scores showed a nearly parallel, nonsignificant increase from fall 1975 through spring 1976; the middle and secondary schools did not show this trend.

Language Arts Skills Domain

- Instructional emphasis on listening, reading, and verbal skills in the elementary schools and listening, reading, and writing skills in the middle and high schools occupied most of the classroom time.
- The areas of verbal skills, such as oral expression, was a distinctly minor component in the middle and high schools.

- The skills domain emphases of the experimental and comparison groups of classrooms were not different.
- The emphasis did not change over time in the elementary schools.

Oral Language Usage

- English predominated at all levels and in all sets of observations; Spanish usage was distinctly lower.
- The experimental and comparison elementary and middle school classrooms showed no important differences on oral language usage.
- The teachers and students in the comparison high school classes utilized Spanish more than in the experimental high school classes.

Written Language Usage

- The majority of the learning materials were in English.
- No written language differences were found between experimental and comparison materials.

Dimensions of Schooling

Elementary Level:

- The elementary classrooms in both experimental and comparison schools were primarily organized into subgroups as evidenced by teacher focus, teacher role, and assignment of materials scores.
- The experimental elementary school teachers increased their attention to individuals over the last four semesters and were significantly higher on this measure than were comparison teachers in spring 1976.
- The major teacher role for both groups was as a presenter of lessons, but the resource person role was greater for experimental than comparison teachers in spring 1976.

Middle School Level:

- The experimental and comparison middle school scores were nearly alike on study locations, teacher focus, and teacher role.
- Experimental classrooms were significantly more oriented toward individuals and subgroups in selection of materials than were comparison classrooms.

Secondary Level:

- The students in the experimental and comparison high school classrooms primarily studied at their desks; there was no difference between them.
- In both groups, most assistance to pupils came from teachers rather than peers; the utilization of teacher assistance was significantly greater for ESP classrooms than comparison classrooms in spring 1976.
- The teacher serving as a resource person was significantly more frequent for ESP classrooms in spring 1976 and the teacher as a presenter of planned lessons was significantly less frequent than comparison classrooms.
- Teacher focus on individuals was significantly more frequent in experimental than in comparison classrooms in spring 1976.
- Materials were assigned to individuals significantly more and, to the class as a whole, significantly less frequently in ESP than comparison classrooms in spring 1976.

Although the experimental and comparison classes were generally alike through most of the observations, in the last set, spring 1976, ESP was found to have moved toward individualization on some measures.

In total, the thrust of the experimental program in this study was to improve the learning environment through:

- Orientation and inservice training for teachers that would enhance the teacher/pupil relationships;
- Provision of culturally relevant materials;
- Encouraging the use of Spanish to aid the communications process.

The implementation of these factors in this program neither significantly changed the emotional climate nor teacher interpersonal style scores over the four year time span, nor did it significantly raise the scores of these measures above those found in the group of comparison classrooms. The findings led to the tentative conclusion that these factors and/or the degree of their implementation were insufficient to cause major modifications in the academic climate, as defined by the dimensions measured.

To address the specific needs of the students, individualization of instruction was a concern of the program. To accomplish this end, the staff and consultants:

- Conducted teacher orientation and inservice training about individualized instruction throughout the life of the program; and
- Designed the experimental program materials for group or whole class instruction for the first three years, with the exception of materials for middle and high school mathematics.

The data collection for the first three years showed few practices related to individualization in the classes. Through that period of time, no important differences were found between the experimental and comparison classrooms. Orientation and training appeared insufficient to cause major shifts away from subgroup and whole class approaches, and toward individualization instruction.

In the fourth project year, the program provided substantial amounts of materials designed for individualization. Seven months later, several factors involved in individualization were observed in ESP and comparison classrooms and these were significantly greater in ESP classrooms than in comparison classrooms for the middle and high schools. Because of the existence of differences at one single observation only, the last in the series, the researchers tentatively concluded that training, enhanced by the appropriate materials, can bring about changes in instructional approaches.

Finally, some research literature has reported improved emotional climate as a result of increased openness in education, primarily through individualization of instruction, using the students' home language, and providing culturally relevant learning materials. Viewing all the results of the present study together, the general conclusion was that, at least in the span of time these aspects of instruction existed in this experimental program, these factors did not substantially enhance the emotional climate in the classrooms.

CHAPTER I: INTRODUCTION

Educational practitioners and theorists alike have maintained that classroom teachers are the most critical factor in the educational process. More recently, a report on Lau vs. Nichols remedies (98) called for the identification of culturally responsive classroom teacher behaviors as one means of improving the academic achievement of ethnic and language minority groups. Presumably, if successful teacher behaviors that enhance achievement could be identified, and concomitant instructional processes accordingly modified or instituted, the use of optimally effective teaching strategies could enhance student learning.

Although there have been many previous studies on the impact of teacher behaviors on student achievement, the conclusions have often been inconsistent. Furthermore, little research exists on minority group teachers. This report therefore examined classroom teacher behaviors of a sample of multi-ethnic (Mexican American, Black, and Anglo) group teachers of a South Texas urban school district involved in a large, federally supported program, the Edgewood School Plan, designed to promote "compatibility" between the instructional process and student needs. This report is viewed as serving two principal purposes:

1. providing an additional body of empirical research on teacher behaviors per se;
2. assessing teacher behaviors as a part of improving student learning.

The report should also contribute to the body of methodological approaches used in this field.

The Edgewood School Plan

The Edgewood School Plan (ESP), formerly called the Edgewood Experimental Schools Project of the Edgewood Independent School District in San Antonio, Texas, was designed as a program intended to improve student performance through a process of educational change guided by a "theory of incompatibilities." (30) Briefly, this theory asserted that the Edgewood schools represented a traditional system "designed for White, English speaking, Anglo Saxon, middle class oriented children," staffed by teachers trained only to teach such children, and which therefore failed to speak to the "cultural and learning characteristics of the student population it purported to serve." The overall goal of ESP was to redesign the educational program to "eliminate existing incompatibilities" and to replace them with a system that would "reflect the student's cultural, language, and economic characteristics, and be compatible with his learning style."

The ESP program focused on six of the twenty-six schools in the district: four elementary, one middle, and one secondary school. These schools were chosen by the district for experimental treatment in conjunction with the National Institute of Education. The students in these schools were primarily Mexican American. Nearly half the teachers were also Mexican American. The six schools were managed under an Associate Superintendent for the Edgewood School Plan, rather than within the general administrative structure of the district. The associate superintendent

reported directly to the superintendent and through him to the board of education.* The experimental schools participated in a number of other federal programs during the period covered in this report.

Central to the ESF program was instructional staff development to enhance the classroom environment and provide teachers with multiple instructional strategies in working primarily with Mexican American students. (30) The staff development activities were varied, both in content and in time. Consultants were brought in to teach individualization of instruction, diagnosis and remediation, performance objectives, and several topics related to an improved teacher-student relationship. Not all teachers were included in these training sessions but over the four years, most were reached. It must be emphasized that this training, for the most part, was of short duration, lasting from a few hours to a week.

ESP itself provided the inservice education. Classroom observations were conducted in many of the teachers' rooms and some explanation of the results was given in individual and/or group sessions.** Teaching techniques were explored in both individual and group meetings. Orientation to the ESP philosophy and methods was also conducted. Again, however, the time devoted to these activities was not extensive.

A further dimension of the teacher training was added through the principals and assistant principals. As instructional leaders, these officials provided varied amounts of training through their staff meetings, classroom supervision, and individual conferences. Other supervisory personnel from the district also were involved in the training although this normally was of an orientation nature.***

ESP staff, teachers, and consultants produced a wide variety of curriculum materials. Commercial materials were also acquired. A large quantity were produced. However, the extent of their implementation covered from a few weeks to two years. Only one ESP prepared program was in full use for two years; all others were less. Curricula were implemented for a time and then modified substantially or dropped. No curricular treatment was constant across the four years except for the texts provided by the state - and these were not the primary teaching vehicle in most classrooms. Some teacher training was carried out for most of the curricular materials introduced but it was frequently of very short duration. In sum, no constant treatment persisted over the four years covered by the present study. (47)

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*The first (28) and second (19) interim reports on the experimental school program provides the details on the ESP schools and the administrative structure.

**Details of these efforts may be seen in an ESP publication (29) and in Theimer (90).

***Credit work through courses at local universities supplemented the training, with financial assistance through ESP.

The Comparison Schools

Two additional elementary, one middle, and one high school were included in the present study and served as comparison (control) schools. They were chosen by the researchers in the first phase of the overall study of the Edgewood School Plan to serve as control schools against which to measure any changes discovered in the ESP schools. The baseline investigation found the comparison schools similar in ethnic group composition of staff and students, socioeconomic level of the families in the area served by the schools, and in both academic achievement and affective characteristics of the students.(28)

The comparison schools were administered within the general management framework of the Edgewood Independent School District. They participated in a wide variety of federal and state supplementary programs,* many of which provided some training for the teachers. As with the ESP schools, this generally consisted of inservice training lasting from an hour to several days. The content was also varied but it tended to be similar to that for ESP. The intensity of the staff development, seen over the four years, was somewhat less than that for the teachers in the experimental program.

Bilingual education was offered in grades K-2 in the comparison schools. Some intensive remedial programs were also available. Generally, the materials were the state adopted texts, supplemented with some teacher made and commerical units. Instruction was primarily in English and used mostly traditional approaches. An exception to this pattern occurred in 1975-1976, when the comparison high school introduced staff and commercially produced individualization packets in about 75% of the classrooms. Teacher inservice training to facilitate the utilization of the packets, however, was severely limited due to a reduction in the awarded federal funds. Observed implementation, reported in a separate study (48), tended to be a mixture of individual, small group, and class as a whole presentation.

*For a supplemental listing of the programs available in the district, see the report by Potter (76).

CHAPTER II: REVIEW OF THE LITERATURE

The teacher behavior literature is both varied and complex. Thus, this review is limited to: (a) teacher role, (b) teacher affective and cognitive characteristics, (c) personality aspects, and (d) classroom observation studies. Those studies utilizing the instruments included in the present research, the Observation Schedule and Record (71) and the Dimensions of Schooling Questionnaire (75), are emphasized in this review.

Teacher Role

As a working definition, teacher behaviors are defined here as identifiable patterns and groupings of consistent teacher characteristics which may affect the learning process. The investigation of these teacher behaviors has thus far remained at a developmental stage. Early attempts to provide measures of teacher and pupil classroom behavior conducted by Horn (44), Puckett (78), Thomas et al (92), and Wrightstone (108), although important beginning efforts, were based on limited constructs of teacher behavior, such as comparisons of authoritarian versus permissive dimensions, or project versus subject matter methods.

During the 1950s, much of the research in teacher behaviors focused on teacher role. Kinney (49), for example, developed a broad classification schematum of teacher roles both within and outside the classroom setting. Fishburn (33) expanded Kinney's classification system into six areas which considered the teacher role as: a director of learning, a counselor, a mediator of culture, a liaison person between school and community, a member of the school community, and a member of the teacher profession.

Havighurst & Neugarten (41) also developed a classification system which categorized teacher behavior into dichotomous constructs of roles in relation to adults (i.e., employee, colleague, advisor), and pupils (i.e., teacher, disciplinarian). Nedelsky (73) attempted a classification of situation behaviors in terms of teacher interaction with pupils. Situational behavior included such actions as the teacher influencing group attitudes, channeling pupil attitudes, and teaching basic skills. These classification schema, however, suffered from a lack of consistency and integration, according to Wallen & Travers (101).

Teacher Affective and Cognitive Characteristics

Teacher personality and characteristics have, in addition to teacher roles, received increased attention. Teacher attitudes, values, personality, demographic characteristics, and cognitive abilities have generally been the focus of educational research. The studies in these areas are numerous and were reviewed extensively by Getzels & Jackson (40).

Particularly noteworthy investigations of teacher attitudes were those conducted by Leeds (54), resulting in the development of the Minnesota Teacher Attitude Inventory (MTAI), and that of Callis (14). The Leeds study concluded that classroom teacher-pupil relations were associated with

teacher attitudes as measured by the MTAI. The Callis study found significant attitude changes in teachers during teacher training, as well as significant differences among major curricular groupings. Although the MTAI had been used in research on teacher training institutions, sex, teaching experience, and subject matter, the results reported by many studies are inconsistent (9, 11, 13, 21, 23, 27, 53, 64, 79, 81).

A number of investigations have also been conducted on teacher attitudes in relation to other personality measures such as temperament, interest, and personality constructs tapped by the Minnesota Multiphasic Personality Inventory (MMPI), the California (Authoritarianism) F-Scale, and similar instruments. In their study of the relationship between the MTAI and selected MMPI scales, Cook & Medley (22) found significant personality differences between teachers having high and low degrees of rapport with students. Wandt (102), using a scale he developed, studied the attitudes of superior and inferior teachers and reported that teacher behavior and attitudes toward both pupils and administrators were significantly related. In a subsequent study, McGee (59), using a classroom observation measure of the F-scale, cited a positive significant relationship between observed teacher authoritarian classroom behavior and F-scale results. Significant differences were found between sexes, with men scoring significantly lower on authoritarianism than women. Furthermore, Lindgren & Patten (56) used the MTAI and F-scales to study high school and elementary teachers. The latter group scores were significantly more positive with respect to more favorable attitudes toward children and acceptance of contemporary educational theory.

Della Piana & Gage (27) and others (2, 58) proposed that classroom behavior is a function of the teacher's characteristics as well as of pupil values and needs. They pointed out from the findings of their research that positive pupil affective values (as measured by the "My Teacher" scale) corresponded to the teacher's MTAI score, and asserted that the values of pupils are significant factors in the classroom effectiveness of teachers.

Teacher Personality Characteristics

One of the most extensive investigations of teacher characteristics was that conducted by Ryans (80). Of particular interest is his schedule of nine "personality characteristics" based on attitudes, verbal ability, and emotional stability variables. In his results, correlating teacher "personality" characteristics with teacher classroom behaviors, he revealed some significant differences when biographic and background factors were considered, such as: age, length of teaching experience, sex, elementary versus secondary teaching, and certain demographic characteristics.

Teacher Effectiveness

Much of the early research on assessing teacher effectiveness tended to be based on heuristic rather than on empirical grounds. Since then, the inclusion of applied and experimental psychology, and the use of descriptive and inferential statistics in teacher and classroom investigations has improved the quantification and analysis of data. Some teacher

effectiveness research focused on attempting to quantify the variables and draw inferences based on macro-level units of analysis such as certain categories of observable behavior in the classroom. In this regard, the work and instrumentation produced by Flanders (35), Medley & Mitzel (64), and Guilford (1) received considerable attention, although many subsequent studies using these instruments have produced inconsistent findings.

The reviews conducted by Rosenshine (79) and Soar (88) revealed scant research involving micro-level analyses of teacher behaviors, such as discrete teaching techniques (i.e., type and amount of questioning) in terms of learner outcomes. Rosenshine's survey of selected studies did, however, reveal some consistent patterns such as positive significant correlations in the use of "direct, narrow questions" in reading and mathematics, and negative significant correlations of "student independent study without teacher," "student inattention, misbehavior," and "time on non-curricular activities." Soar dealt with the serious methodological issues that exist in attempting to integrate research findings but also outlined some trends in the area, such as the use of:

- teacher control of pupils' learning (open classroom concept, behavior modification),
- learning conditions (tightly structured group work for concrete subjects versus independent work for abstract, complex tasks),
- amount of teacher-pupil interaction in relation to pupil cognitive activities,
- the interaction of socioeconomic status with affective expression, and
- apparent relationships present between socioeconomic status and internal locus of control.

Additionally, Soar provided guidelines for more systematic research designs.

Classroom Observations

The most serious attempts at measuring teacher behaviors and the performance of students have dealt with two general dimensions of the issue:

1. Cognitive processes in the classroom.
2. Teacher affective interactions with pupils.

The first of these, that deals primarily with the cognitive processes, was extensively developed by both Flanders and Guilford. Teacher affect has been studied since the 1920s and the earliest efforts were reviewed by Barr (5) in 1929. These used several researcher made instruments for charting the interaction in the classroom and little standardization was attempted.

During the 1940s, efforts at standardization of observation and analysis were being examined in considerable detail. Jayne (45) focused on the items in the instruments and found some that, individually, did not predict outcomes but when combined into scales, did predict pupil performance. Withall (106) restricted his work on effective teaching to the socioemotional climate in the classroom, utilizing recordings and then analyzing the transcripts of what had occurred in the teaching-learning process. He later developed a climate index through revision of his early instruments. (107) Flanagan (34) contributed a coding system for observation.

Cornell, Lindvall & Saupe (23) reported their work on the individualities of schools and classrooms in 1952 and found significant interrelationships between emotional climate and the measured learning. Contrary to Withall (106), they sent trained observers into the classrooms and charted teacher-pupil interaction through prearranged classifications.

Using the concepts from the Withall study and items from the Cornell, Lindvall & Saupe instrument, Mitzel & Rabinowitz (68) prepared their first classroom observation instrument in 1953 and entitled it the OScAR. In 1955, Medley & Mitzel (66) reported on the studies they had conducted during the development of the instrument. In 1957, Medley & Klein (61) presented their efforts to correlate the classroom observation results with those of a pupil reaction inventory, and they found a correlation of .32 between the OScAR emotional climate score and the student reported rapport score, which were "not quite significant at the .05 level."

In 1958, Medley and Mitzel published two articles related to the analysis of classroom behaviors, one on the utility of analysis of variance methods in comparing behaviors and the other on refinements of the OScAR. (62, 63) They had previously used two observers to work simultaneously in each classroom but concluded that two observers were wasteful of resources and produced no better results than did one.

During the late 1950s, Morsch (70) also used the OScAR concepts and some of its items to study effectiveness in armed services teaching. His analysis techniques, chiefly special item analyses, were a significant contribution to the field. Brown (12), using a similar measurement approach, found low but significant relations between a modified Withall climate scale and arithmetic reasoning. Medley & Mitzel (65, 66) also worked on the correlations among several behavioral characteristics and teacher effectiveness during this period.

Wilk et al (105), using a slightly modified version of the early OScAR, applied the technique to the training of student teachers. Bowers & Soar (11), employing another modification called OScAR 2a, together with the MTAI, found low correlations between the scales of the two instruments but concluded that teachers with low verbal emphasis would increase significantly after training. Morrison (69) studied student teachers through the OScAR 2a, pupil performance on devised units, and supervisory and pupil ratings. Emotional climate was increased through training and was found to be related to performance.

Medley & Hill (60) further modified the OScAR into the OScAR 4V and measured it via cognitive analysis. Soar used essentially the same version and related its results to achievement through standardized tests. While his results were mixed, minimum structure "seemed to foster pupil growth" (87, p. 10). He further found that "teacher negativeness" did not seem to affect achievement over the two year period even though some of the interim, short run results appeared to be adversely affected. An OScAR 5V version (67) was produced later and it has been reviewed in several publications (1, 37, 38, 74).

Considerable interest in two corollary aspects of teacher behavior gained prominence during the period. The first of these was the relationship

of Medley & Mitzel's "openness" and Flanders' "indirectness" dimensions to pupil performance. Innovation appeared to be fostered where these dimensions were present. (43, 52, 57, 89) "Indirectness" and other variables have been investigated but the results were not conclusive. (8, 77, 85) Substantial reviews of many of the studies have been made available through the literature. (3, 9, 10, 32, 37, 64, 74, 83)

Several investigators in the British commonwealth countries also studied classroom techniques and produced a number of noteworthy research reports, all well documented in the Lawrence (45) review. One of those which attracted considerable attention in the United States was a technique called dimensions of schooling, originally a teacher self reporting form designed to measure openness in education.

Utilizing the principles of Wahlberg & Thomas (100), and information collected on physical facilities, the Ontario (Canada) Institute for Studies in Education (75) produced the Dimensions of Schooling Questionnaire that examined both the architectural and classroom interaction facets of open education. Followup studies using the instrument found that it satisfactorily measured degree of openness and that there were significant positive attitude differences for students in open classrooms (94).

Limitations of General Teacher Behavior Research

As the review of selected literature on teacher behaviors suggests, there is a quantity, if not always quality, of research available. Careful examination of the methodology, instrumentation, and research controls (or lack of them), vividly demonstrates that despite some conceptual and instrumentation advances, teacher behavior research suffers from some severe limitations.

Although large numbers of other studies have been conducted, it must be noted that the strength of the presumed relations generally have been about r=.30 or lower, which raises questions on the generalizability of the obtained results. Additionally, researchers such as Coleman (21), Gage, Leavitt & Stone (36), Budd & Blakely (13), and Shavelson & Dempsey-Atwood (81), are among those who have questioned the methodological and psychometric properties of the instruments used and/or the conclusions derived from these studies.

Barr's conclusion about these studies was that "The instability of behavior...is the dominant component in the unreliability of observations, and the limiting factor on validity." (5, p. 29) Nearly twenty years later, he again reviewed the work in this field and cited some improvement in the methodology but still found many inconsistencies in the instruments used and reporting of data. (6)

Wallen & Travers (101, p. 466) pointed out that much of the research on teacher effectiveness "can hardly be conceived as constituting a program of scientific research." Many studies are investigator specific, lacking well defined teacher variables and experimental controls, or are based on unreasonable assumptions. Komisar (50) was the most critical of all the

reviewers and called for a moratorium on new instrument production, and more attention to analysis and appropriate statistical procedures.

Teacher Behavior Research with Minority Children

While the literature on teacher behavior is voluminous, one area, teacher behavior research with minority children, has been occasionally reported. The experiences of the minority child, whether due to his socioeconomic status, ethnicity, or language characteristics, might have important impact on his receptivity to certain teacher behaviors.

A characteristic that appears particularly relevant to teacher behaviors is teacher values. Getzels (39) argued that the lower class child, in contrast to the middle class child, may face severe discontinuity between the values he has internalized and those that are functional in the school setting. Such discontinuity might affect not only his behavior toward that school but also the school's behavior toward him.

Early studies conducted by Wickman (104), in the area of teacher characteristics and classroom interaction, suggested that middle class teachers internalized the value orientations of their social class and used these as standards for judging pupil behaviors. These appeared to play a significant role in mediating teacher perceptions about student behavior.

In a Chicago study, important to the present research because it included many Mexican American pupils, Becker (7) found that teachers had middle class value systems that conflicted with and alienated them from lower class students. Davidson & Lang (24) discovered that teachers rated the classroom behavior of disadvantaged children as undesirable even when the children's academic performance was satisfactory. Davis & Dollard (25) argued that social class value orientations of the teacher entered the teaching-learning process in two ways: one, by governing the teacher's distribution of rewards and punishment, and two, by determining which kinds of pupil behaviors would be rewarded by the teacher.

A recent study of Mexican American teachers and pupils by Munoz (72) found that low and middle income students held similar school related values and that these differed only slightly from those held by teachers. Student reponses to items on interest level and educational change were consistently negative. However, responses were positive and conservative toward education in general, discipline, and the grading system. Most teachers expressed positive opinions about the classroom and more liberal opinions about discipline and respect than did students. The study concluded that while some disparities existed between teachers and students regarding their values and perceptions of classroom experience, the direction of these was opposite to that which had been hypothesized. Students apparently had internalized certain middle class values whereas teachers had internalized some, and rejected other, middle class values.

Cervantes' research with Mexican American children (16) found significant relationships between teacher locus of control, classroom emotional climate, and teacher interpersonal style. Earlier studies by Davis & Phares (26) and Lefcourt & Wine (55) had also reported that internal locus teachers tended to be more open, actively sought information, supported

innovation, and were able to resolve more situational uncertainties. Vasques (99) concluded that teachers were significantly more internal on the attribution of pupil success than pupil failure. That is, teachers attributed pupil success to teacher efforts and pupil failure to other, non-teacher, causes.

Achievement has not always been significantly higher for the open education programs. Traub et al (95, 96, 97), in three separate studies involving socioeconomically and linguistically different children, reported inconsistent results. Generally, they found that suburban Toronto students' achievement in open and traditional classes did not differ significantly. In the inner city schools, however, achievement was significantly higher for students in traditional classrooms. While socioeconomic level was higher in the suburbs than in the inner city, individual student achievement was not affected by that variable. The researchers also noted that there were many more pupils in the inner city schools than suburban schools whose first language was not English and they speculated that that variable might have affected the results.

Finally, it must be noted that the methodological limitations cannot be separated from the generally apparent theoretical vacuum in teacher behavior research, and in particular, with respect to the educational and social needs of minority children. Indeed, this issue above all others must be addressed if substantive progress is to be made to expand the understanding of teacher behavior in terms of cultural responsiveness to minority groups.

CHAPTER III: RESEARCH DESIGN

The present research attempted to fill a portion of the vacuum in knowledge about teacher and minority student interaction in instruction by focusing on two general objectives:

1. To conduct studies in the area of teacher behaviors with minority children;
2. To assess teacher behaviors as an integral part in the enhancement of minority student achievement.

Both of these were pertinent to the Edgewood School Plan context.

Research Questions

In general, the study's primary research question was whether the Edgewood School Plan was able to affect the climate of the classrooms in the ESP schools and produce a greater degree of openness within the classroom relative to the classrooms of the comparison schools. The assessment of the ability of the ESP program to increase the openness of the classroom was designed to include the three school levels, elementary, middle, and high, and to include a seven semester (3 1/2 year) period of time. Within this primary research question, individual research questions directed at specific areas were formulated. They were:

1. Was the ESP program able to improve the emotional climate of the classroom?
2. Was the program able to produce teacher behavior, student behavior, and/or teacher interpersonal style in the classrooms of the ESP schools that was more positive than that shown in the comparison schools?
3. Was the program able to make significant changes from the traditional classroom settings in the comparison schools in such areas as the study locations used by the pupils, peer group assistance among the students, the teacher role, the teacher focus, and the selection of materials?
4. Were there changes in the emphasis that the teachers placed on the areas of listening, reading, writing, and verbal skills, as outgrowths of the communication skills project implemented by the program?
5. Were there significant differences in the classroom language usage for instructional and non-instructional interchanges (a) between the teacher and the students, and (b) among the students, relative to the language of instruction, for the classrooms in the ESP and the comparison schools?

In answering these questions, the effectiveness of the ESP program to produce an open classroom atmosphere, or to produce changes in various characteristics of the classroom which might be related to developing a conducive environment for learning, was examined.

Research Design

The research design employed in this study was longitudinal in nature, in which classrooms designated as experimental and control were observed. Various classroom activities, interactions, and procedures also were noted by trained observers.

The classrooms were observed in elementary, middle, and high schools, both in the experimental schools (ESP) and in the control schools (comparison) over a period of seven semesters (3 1/2 years). The observations that took place in the fall semesters occurred in October. Thus, sufficient time was provided for the teachers and students to settle into a normal routine and become familiar with the curriculum (rather than the observational data picking up atypical patterns of instruction and interaction). The observations that took place in the spring semesters occurred in late March and April, and this permitted the assessment of changes within the school year for some of the measures and indices used.

During the period of the study, the priorities of the Edgewood School Plan, and hence of this study, were changed. The schools included also experienced a high turnover rate among teachers. Accordingly, the final extent to which the study could assess the impact of the ESP treatment on the classroom environment was somewhat reduced in scope.

Instrumentation

The Observation Schedule and Record (OScAR 2a), developed by Medley & Mitzel (63), was utilized in the early part of this investigation. The instrument subsequently was revised by collapsing some categories and adding a "dimensions of schooling" (75) portion from earlier work in Canada and California. Further, a section was added to the OScAR to measure the project-specific attributes of language (Spanish and English) used in instruction. The resulting combination was entitled the Modified Observation Schedule and Record (M/OScAR).

The OScAR 2a Instrument

Prior to conducting the present teacher behaviors study, several teacher observation instruments, such as the Flanders (35), OScAR 4V (60), and OScAR 5V (67), were reviewed. The OScAR 2a was selected because of its relative simplicity, minimal training required to achieve adequate inter-rater reliability, type of data elicited, and adaptability to anticipated future modifications.

As originally used, the OScAR 2a consisted of six major data collection categories: classroom activity, pupil grouping, expressive behavior, signs, materials use, and subject. The first four categories were subdivided into three observation periods. In several categories frequency counts of observed behavior were recorded each time it occurred, while in other categories only a single tally was made. Specific directions for using the instrument have been discussed elsewhere (63). The initial experience with the OScAR 2a and evaluation of the data after the first two observation periods led to several revisions.

The M/OScAR Instrument

In consultation with Skager (84) and Theimer (91), a review was conducted of the OScAR 2a as it functioned in the ESP study. Upon their advice, the OScAR 2a was subsequently modified by deleting items and/or categories that were either irrelevant to the study or on which little, if any, data consistency appeared. Of the 44 items in the "activity" section of the OScAR 2a, 10 were retained in the new version (presented in Appendix A). The OScAR Expressive Behavior category was reduced from eight to four items. The other OScAR 2a categories were eliminated. Additionally, several new data categories were added: Language Usage (oral) following the OScAR 2a format; Language Usage (written); Skill Domains focus (listening, verbal, reading, and writing). A portion of the Dimensions of Schooling Questionnaire (75), appropriate to the Edgewood program's goals, was added to help assess the openness of the classrooms.

In the Language Usage (oral) category, a single tally was made during the observation periods 2, 4, and 6. Both instructional and non-instrucational dimensions of language use were observed and recorded as either being Spanish, English, or bilingual. This category thus provided a measure of classroom verbal language usage among the pupils, between the teacher and the pupils, and between the pupils and the teacher.

Simultaneously, Teacher Interpersonal Style was observed and recorded in the identical manner as was used in the original OScAR 2a instrument. In this category, a teacher supportive statement or gesture of approval or affection was recorded as being positive; conversely, a reproving statement or reproving gesture was recorded as being negative. The frequencies of these statements and gestures were summarized to produce a single score for each classroom observed.

Emotional climate was recorded in observation periods 3, 5, and 7. Emotional climate referred to teacher or pupil behavior which: (a) denoted affection or lack of affection in the classroom and (b) occurred at least once during the observation period. Thus, measures of teacher behavior, of student behavior and of the emotional climate (teacher and student measures combined), were obtainable from aggregating data for each of the observation periods in which certain positive and negative behaviors occurred.

Formerly, multiple tallies were used for each OScAR 2a category, but in the M/OScAR, only single incidences were recorded since multiple occurrences of one single behavior could outweigh all others under the former system and yet not have proportionately affected the overall climate as indicated by its frequency of occurrence.

Language usage (written) encompassed the entire observation session and was used to identify, by single tally, whether commercial texts, teacher product texts, audio visuals, games, graphics, or other teacher aids were used or were presented in the classroom and available for use. Materials were further designated by language categories (Spanish, English, bilingual).

The skill domains category consisted of listening, verbal, reading, and writing emphasis topics. The observer, in the last 20 minutes of each observational period, ranked the degree of emphasis placed on each of the skill domains by the instructor as either receiving high emphasis (60-100%), moderate (30-59%), low (1-29%), or none. This section was added to the instrument to reflect the impact of the communications skills project designed by the experimental program to increase language arts achievement of the pupils.

The dimensions of schooling section consisted of five dimensions: study locations, assistance to students, teacher role, teacher focus, and selection of materials. This category of indices was adopted from a questionnaire modified by the Far West Educational Development Laboratory and based on earlier work by the Ontario Institute for Studies in Education (75). The dimensions were monitored to attempt to ascertain those aspects of instruction which were either teacher or learner centered. The rankings, based on a Likert type rating scale, also were made during the last 20 minutes of each classroom observation period. Weighted average scores of the indices comprising each of the five dimensions were used as measures of the openness of the classrooms. An overall measure, the average of the weighted scores for the five dimensions, was also used for the analysis.

The modifications in the instrument and observational procedures were made after considerable examination by the Technical Panel members for this study, thus assuring that salient elements of the experimental program would be adequately measured. The changes were then field tested, revised again where needed, and an administration manual (71) was produced (Appendix B).

Conduct of the Observations

During intensive staff meetings, those assigned to recording observations studied the M/OScAR manual. Both the definitions important to the items and the parameters of scoring them were explored thoroughly.

Subsequently, audio visual recordings were made of actual teaching situations with different classes, both monolingual English and bilingual English/Spanish. Recognized experts viewed the recordings and scored the classes with the M/OScAR. Differences were minor and standards were established. Their standardized scorings were then utilized as the baselines for the training with the observers. Sample expert observations were studied with the observers, clarifying any doubts as to why an incident was scored in a particular way. The observers then scored other taped classes and their ratings were compared with those of the experts. When differences arose, that portion of the tape was reviewed and the appropriate explanations given. This process continued until the observers' scorings agreed with those of the experts. Absolute congruence was required on the emotional climate and teacher interpersonal style sections of the instrument. Minor variations occurred on those sections in which the judgment of percentage of time or emphasis was required since the instrument contained narrow separations between categories. (See Appendix B for the Observer Guide used with the M/OScAR instrument.)

Subsequent "spot checking" of the observers, via concurrent ratings with one of the experts, was conducted. The inter-rater reliabilities on these was never less than 90% and the differences between the scorings invariably occurred where the observed percentage of time or emphasis was at or near a category division in the instrument.

Observers were assigned to particular schools at the elementary school level, and were assigned across the ESP and comparison schools at the middle and high school level. The assignments to schools and classrooms remained nearly stable during the last two years except that two additional observers were utilized because of the number of classrooms observed. Both of these observers worked in all the schools. The observations during the first two years, however, were conducted on the basis of random investigator assignment. The distribution of observers across schools was therefore different during that period than during the last two years.

Despite these variations, the intensive training and subsequent checking procedures lend credibility to the ratings. No systematic bias was believed to have altered the results.

Sample Characteristics

The sample included 401 classroom observations with 229 teachers observed. (Breakdowns of the total numbers of observations by experimental and comparison groups, instructional levels, and ethnicity and sex of teacher are given in Table 1; Appendix C contains these data by ethnicity and sex for each instructional level.) The classroom observations were made over a period of seven semesters from the spring semester of 1973 to the spring semester of 1976.

As can be seen in Table 1, the changes in focus of this research effort are exemplified by the number of classrooms observed at the middle and high school levels. The low frequency of classrooms observed at the middle and high school levels during the fall semesters of 1974 and 1975, and the spring semester of 1975, limited the extent of analysis at these levels. Similarly, the low number of male teachers, especially at the elementary level (Appendix C) and teachers of ethnic groups other than Mexican American precluded analysis based on these factors. The analysis, defined by the availability of the data, permitted the use of cross sectional analysis within the individual semesters for independent groups of teachers and the use of longitudinal analysis across semesters, for groups of teachers observed in two or more semesters.

The changes in focus in the elementary schools are exemplified also by the grades observed in spring 1973 semester and the 1973-1974 school year. For the final four semesters, fall 1974 to spring 1976, the same grades were observed in all elementary schools and the primary emphasis of the analyses of the elementary school data was to detect trends and group differences over this period of time.

Table 1: Selected Characteristics of Classroom Observations in ESP and Comparison Schools

Classrooms Observed	1973 Spring	1973 Fall	1974 Spring	1974 Fall	1975 Spring	1975 Fall	1976 Spring
Total	67	62	65	42	42	39	84
ESP	38	34	36	28	28	27	44
Comparison	29	28	29	14	14	12	40
Teacher Ethnicity							
ESP							
Mexican American	21	13	17	21	20	20	28
Black	6	4	3	1	2	2	2
Anglo	11	17	16	6	6	5	14
Comparison							
Mexican American	13	13	13	12	14	11	19
Black	4	3	3	0	0	0	7
Anglo	12	12	13	2	0	1	14
Sex of Teacher							
ESP							
Male	14	8	12	4	3	2	14
Female	24	26	24	24	25	25	30
Comparison							
Male	8	14	10	2	2	3	21
Female	21	14	19	12	12	9	19
Level							
ESP							
Elementary	16	12	16	24	24	23	14
Middle School	8	8	7	2	2	2	10
High School	14	14	13	2	2	2	20
Comparison							
Elementary	8	6	8	12	12	10	10
Middle School	7	8	8	1	1	1	10
High School	14	14	13	1	1	1	20
Grades Included							
Elementary	K,1,3,5	1,2,4,6	K,1,3,5	K,1,2	K,1,2	K,1,2	K,1,2
Middle School	7-8	7-8	7-8	7-8	7-8	7-8	7-8
High School*	9	9	9	9	9	9	9

*Students in classrooms observed were predominantly ninth grade but with varying numbers of students from other grades.

Analysis Procedures

Non-parametric and parametric statistical procedures were used to analyze the collected data with supplementary use of graphs where deemed helpful as explanatory aids. The order of presentation of the analyses of the results are as follows:

1. The analysis of the classrooms' openness as measured by the emotional climate measure.
2. The analysis of the teacher behavior, student behavior, and teacher interpersonal style measures.
3. The analysis of the characteristics and activities within the classroom as measured by the dimensions of schooling indices.

4. The analysis of skills emphasis as measured by the skills domain indicators.
5. The analysis of the classroom verbal interchanges using the language usage (oral) indicators.

Analyses, both within individual semesters and for individual school years, were performed for the results based on the emotional climate, the teacher behavior, the student behavior, and the teacher interpersonal styles measures. A description of the measures and the items comprising each measure appears in Appendix D; weighting factors used to combine the five categories of the M/OScAR Dimensions of Schooling measure are also supplied.

Therefore, a set of two tables with average scores across observed classrooms were computed using the arithmetic average technique. For each of these measures a plot of the trend of these average scores for the classrooms in the elementary schools was included and the trends were discussed.

The statistical procedures used included the Mann-Whitney U test and the Wilcoxon Signed Rank test for the analyses on all measures and indicators, except the language usage (oral) indicator where the Chi Square test or the Fisher's Exact test for 2 by 2 sized tables were used. The Mann-Whitney U test was used for the analysis of differences between the scores of the classrooms in the ESP and comparison schools; the Wilcoxon Signed Rank test was used for the analysis of changes within school years for teachers observed in both semesters. Non-parametric procedures were used predominantly because the data were of the ordinal level of measurement and these procedures have associated tables of exact probabilities when sample sizes are small (42, 82). The choice of test (Chi Square or the Fisher's Exact test) was based on the numbers of classroom observations available for the analysis on the language usage (oral) indicator.

Limitations of the Study

Although the observer training was intensive and some ratings were checked, the data for the first two years were severely limited. The classroom observations during that period were seen as parallel to the teacher reported dimensions of instruction and teacher/student relationships. The sample sizes were intentionally very small and seriously reduced the scope of comparisons that might have been made.

The modification of the instrument, made through advice of the Development Associates technical panel of advisors, left only two sections intact across seven semesters: emotional climate and teacher interpersonal style. Four years of data from all the sections of the M/OScAR would have added significantly to this study.

Finally, the study would have been strengthened had a single assignment pattern of observers existed throughout the period and if inter-rater reliabilities had been calculated for a greater number of observations. It is believed, however, that neither of these presented a systematic bias and that for the purposes of this research, the procedures were adequate.

CHAPTER IV: RESULTS

The data were examined following the research questions, that is, the data analyses were performed on each section of the instrument individually with correlational analysis performed for the relationships between the emotional climate and the dimensions of schooling sections. Further, when important distinctions among observations merited, separate items within the categories were also analyzed. The majority of the analyses are cross sectional within semesters; when the data permitted, longitudinal analyses across time were performed.

Emotional Climate

No significant differences were found between the classrooms in the ESP and comparison schools for emotional climate for:

- any of the seven semesters at the elementary level, and
- any of the four semesters, where the number of observations exceeded 5*, at the middle and high school levels.

Table 2 provides the average emotional climate scores for the semesters observed at each level.

Table 2: Average Emotional Climate Scores by Level and Semester for Classrooms Observed in ESP and Comparison Schools

Level/Group	1973				1974				1975				1976	
	Spring		Fall		Spring		Fall		Spring		Fall		Spring	
	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score
Elementary:														
ESP	16	3.38	12	6.08	16	4.44	24	4.58	24	5.00	23	6.74	14	7.50
Comparison	8	4.88	6	2.33	8	2.00	12	3.67	12	4.42	10	5.90	10	6.60
Middle:														
ESP	8	4.25	8	2.00	7	5.57	2	*	2	*	2	*	10	3.30
Comparison	7	2.57	8	3.75	8	5.25	1	*	1	*	1	*	10	3.00
High:														
ESP	14	2.79	14	3.21	13	3.92	2	*	2	*	2	*	20	3.45
Comparison	14	2.64	14	3.36	13	1.92	1	*	1	*	1	*	20	4.20

*Number of classrooms observed fewer than 5; average scores not computed.
Note: Emotional climate scores have a possible range of +15 to -21.
Ave.=average in this and all subsequent tables.

*A cutoff point of 5 observations was used because analyses and average scores were felt to have little meaning with so few observations.

Although no significant differences occurred within each semester observed for the elementary schools, a marked trend occurred, as seen in Figure 1, between the fall 1974 semester and the spring 1976 semester. This trend shows that the average emotional climate increased for the classrooms in both the ESP and the comparison elementary schools at approximately the same rate. To further analyze this trend, emotional climate scores were compared for classrooms observed in both the fall and spring semesters for each school year. This analysis was performed to check for significant increases between the fall and spring semesters. It showed no significant increases within the school year for either the ESP or the comparison classrooms. The average scores are given in Table 3. Thus, although the trend, as shown in Figure 1, is dramatic, the variations within the observed classroom were large. The increases shown cannot be described as being different from what might have occurred randomly.

Table 3: Average Emotional Climate Scores by Level for Classrooms Observed in Both Semesters of a School Year for ESP and Comparison Schools***

Level/Group	1973-1974 Fall N	1973-1974 Fall Ave. Score	1973-1974 Spring Ave. Score	1974-1975 Fall N	1974-1975 Fall Ave. Score	1974-1975 Spring Ave. Score	1975-1976 Fall N	1975-1976 Fall Ave. Score	1975-1976 Spring Ave. Score
Elementary:									
ESP	12	6.08	4.42	20	4.60	5.30	14	6.21	7.50
Comparison	6	2.33	1.33	12	3.67	4.42	9	6.22	6.44
Middle:									
ESP	7	1.57	5.57**	2	*	*	0	*	*
Comparison	7	3.86	4.57	1	*	*	0	*	*
High:									
ESP	10	3.50	3.70	2	*	*	2	*	*
Comparison	13	3.54	1.92	1	*	*	1	*	*

*Number of classrooms observed for both semesters fewer than 5; average score not computed.

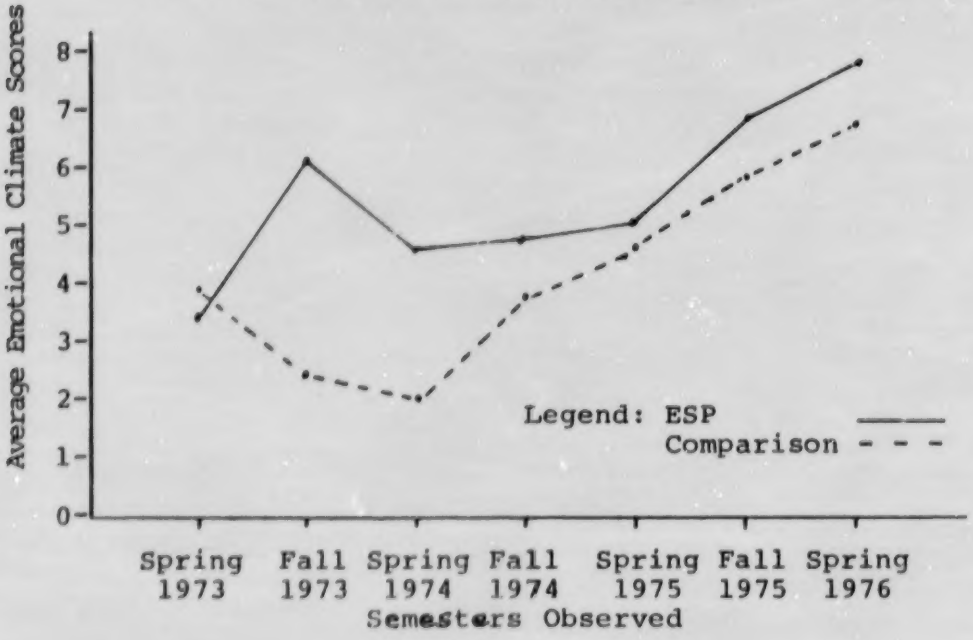
**Scores for spring semester observations significantly higher than the scores for the fall semester observations, $p<.05$.

Similar analyses for changes within the school year were performed for the 1973-1974 data for the middle and high school classrooms. At the middle school level, the spring scores were significantly higher ($p<.05$) than the fall scores for the classrooms in the ESP school. It should be noted that the fall scores were among the lowest found at any level. The fall-spring increase brought the middle school within the range of the

***The average scores on Table 3 are sometimes different from the average scores on Table 1 because scores for classrooms/teachers observed only in the fall or the spring, but not both, were excluded from the analysis and the average scores given in Table 3. This also occurred in Tables 4 and 5, Tables 6 and 7, and Tables 8 and 9.

scores of the other levels. No significant changes in the emotional climate scores were found in the observed classrooms in the fall and spring semesters in the ESP and comparison high schools. Also, no significant differences were found between the ESP and comparison schools for the changes within school years at either of the three levels.

Figure 1: Trends in Average Emotional Climate Scores for Classrooms Observed in the ESP and Comparison Elementary Schools



Teacher Behavior

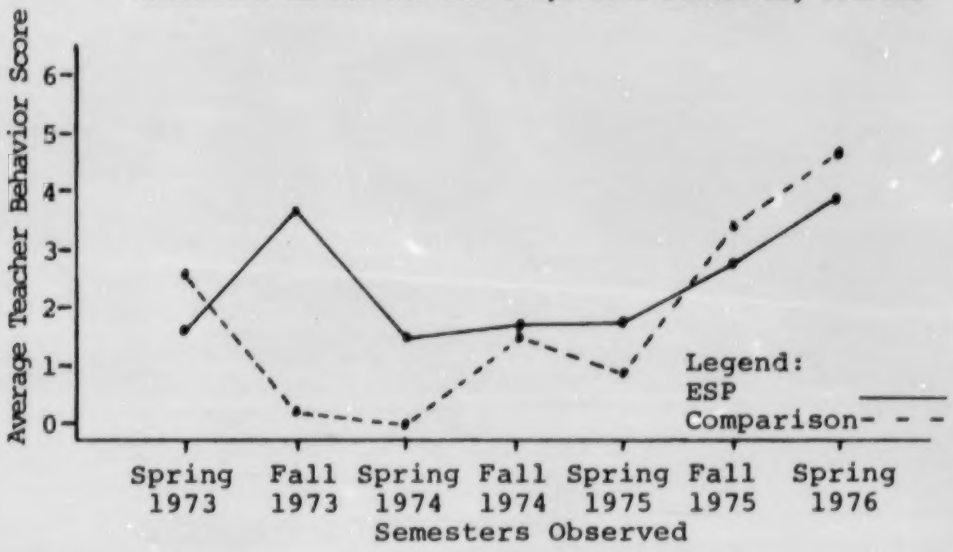
In spring 1974, the ESP high school classrooms had significantly higher teacher behavior scores than the classrooms in the comparison high school. However, other than for this situation, no significant differences were observed between the scores for the classrooms in the ESP schools and those in the comparison schools. Table 4 provides the average scores of the teacher behavior measures for each level. Figure 2 provides a plot of the average scores for the ESP and comparison elementary classrooms. The trend (Figure 2) shows that the average scores dropped precipitously between the fall and spring semesters of the 1973-1974 school year for the classrooms observed in the ESP schools, followed by a stable period, and then a recovery in the 1975-1976 school year. The comparison elementary classrooms showed an increasing trend starting with the spring semester of 1974.

Table 4: Average Teacher Behavior Scores by Level and Semester for Classrooms Observed in ESP and Comparison Schools

Level/Group	1973				1974				1975				1976	
	Spring		Fall		Spring		Fall		Spring		Fall		Spring	
	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score
Elementary:														
ESP	16	1.75	12	3.58	16	1.63	24	1.79	23	1.79	23	2.91	14	3.93
Comparison	8	2.50	6	0.17	8	0.00	12	1.42	12	0.75	10	3.30	10	4.60
Middle:														
ESP	8	2.63	8	0.38	7	2.86	2	*	2	*	2	*	10	1.50
Comparison	7	1.14	8	2.00	8	2.75	1	*	1	*	1	*	10	2.20
High:														
ESP	14	1.57	14	1.50	13	2.46**	2	*	2	*	2	*	20	1.75
Comparison	14	1.64	14	1.71	13	0.62	1	*	1	*	1	*	20	2.35

*Number of classrooms observed fewer than 5; average score not computed.
**Scores for classrooms in ESP school were significantly higher than those in the comparison school, $p<.05$.
Note: Teacher behavior scores have a possible range of +9 to -12.

Figure 2: Trends in Average Teacher Behavior Scores for Observed Classrooms in the ESP and Comparison Elementary Schools



The decline in the teacher behavior scores between fall 1973 and spring 1974 for the ESP elementary classrooms was significant at $p<.05$ (Table 5). This decline was followed by a school year with stable scores and then a year with numerically but not significantly increasing scores. In the ESP middle school, a significant ($p<.05$) increase in teacher behavior scores was found in the 1973-1974 school year; in the comparison middle school, a decline, not significant, was found. Conversely, a non-significant increase in the scores for the ESP high school was found, while a significant decrease was found in the comparison high school. No

significant differences were found between the changes in the ESP and comparison schools within the school years.

Table 5: Average Teacher Behavior Scores by Level for Teachers Observed in Both Semesters of a School Year for ESP and Comparison Schools

Level/Group	1973-1974			1974-1975			1975-1976		
		Fall	Spring		Fall	Spring		Fall	Spring
	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score
Elementary:									
ESP	12	3.58**	1.50	20	1.95	1.70	14	2.86	3.93
Comparison	6	0.17	-0.33	12	1.42	0.75	9	3.33	4.55
Middle:									
ESP	7	0.29	2.86***	2	*	*	0	*	*
Comparison	7	2.14	1.86	1	*	*	0	*	*
High:									
ESP	10	1.70	2.50	2	*	*	2	*	*
Comparison	13	1.85**	0.62	1	*	*	1	*	*

*Number of classrooms observed for both semesters fewer than 5; average score not computed.

**Scores for fall semester classroom observations significantly higher than the scores for the spring semester observations, $p<.05$.

***Scores for spring semester classroom observation significantly higher than the scores for the fall semester observation, $p<.05$.

Student Behavior

No significant differences were found between the student behavior scores for the ESP or comparison schools for:

- six of the seven semesters for the elementary schools, or
- any of the four semesters with sufficient data for the middle or high schools.

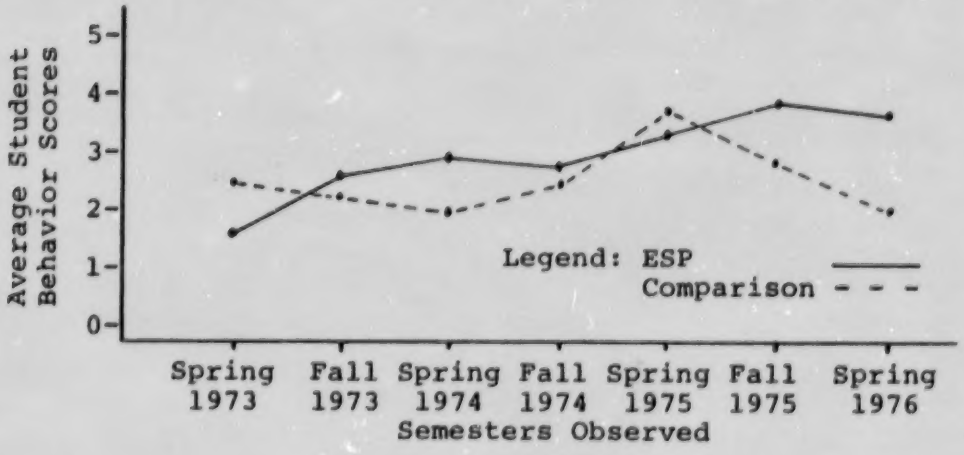
Furthermore, no identifiable trend across the semesters was found. (See Table 6 for scores and Figure 3 for the plots of the average scores for the elementary schools.)

Table 6: Average Student Behavior Scores by Level and Semester for Observed Classrooms in ESP and Comparison Schools

Level/Group	1973 Spring N	1973 Spring Ave. Score	1973 Fall N	1973 Fall Ave. Score	1974 Spring N	1974 Spring Ave. Score	1974 Fall N	1974 Fall Ave. Score	1975 Spring N	1975 Spring Ave. Score	1975 Fall N	1975 Fall Ave. Score	1976 Spring N	1976 Spring Ave. Score
Elementary:														
ESP	16	1.56	12	2.50	16	2.81	24	2.79	24	3.21	23	3.83	14	3.57**
Comparison	8	2.38	6	2.17	8	2.00	12	2.25	12	3.67	10	2.60	10	2.00
Middle:														
ESP	8	1.63	8	1.63	7	2.71	2	*	2	*	2	*	10	1.80
Comparison	7	1.43	8	1.75	8	2.50	1	*	1	*	1	*	10	0.80
High:														
ESP	14	1.21	14	1.71	13	1.46	2	*	2	*	2	*	20	1.70
Comparison	14	1.00	14	1.64	13	1.31	1	*	1	*	1	*	20	1.85

*Number of observed classrooms fewer than 5; average score not computed.
**Scores for classrooms in ESP schools were significantly higher than the scores for classrooms in the comparison schools, at $p<.05$.
Note: Student behavior scores have a possible range of +6 to -9.

Figure 3: Trends in Average Student Behavior Scores by Observed Classrooms in ESP and Comparison Elementary Schools



The analysis of changes within school years in the student behavior scores for the observed classrooms in both the fall and spring semesters of the school year for the ESP and comparison schools also exhibited no significan changes. (Table 7)

In summary, the emotional climate scores of the classrooms in the ESP elementary school exhibited a steadily increasing trend from the fall semester of 1974 through the spring semester of 1976, with the scores of the classrooms in the comparison school exhibiting an approximately parallel relationship. The majority of this trend and the relationship can be attributed

to the teacher behavior component score of emotional climate, in which a somewhat similar trend and parallel relationship occurred. Thus, as measured by the OScAR instruments, the changes in the classroom emotional climate, although not significant in this study, seemed to be more affected by the teacher behavior than the student behavior pattern.

Table 7: Average Student Behavior Scores by Level for Observed Classrooms for Both Semesters of a School Year for ESP and Comparison Schools

Leve/Group	1973-1974			1974-1975			1975-1976		
		Fall	Spring		Fall	Spring		Fall	Spring
	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score
Elementary:									
ESP	12	2.50	2.92	20	2.65	3.60	14	3.36	3.57
Comparison	6	2.17	1.67	12	2.25	3.67	9	2.89	1.89
Middle:									
ESP	7	1.29	2.71	2	*	*	0	*	*
Comparison	7	1.71	2.71	1	*	*	0	*	*
High:									
ESP	10	1.80	1.20	2	*	*	2	*	*
Comparison	13	1.69	1.31	1	*	*	1	*	*

*Number of observed classrooms for both semesters fewer than 5; average score not computed.

Teacher Interpersonal Style

No significant differences were found between the elementary teachers in the ESP schools and those in the comparison schools for any of the seven semesters observed. Significant differences were found at the middle schoole level for the fall 1973 semester (the comparison school teachers had significantly higher scores), but other than that incident no other significant differences were found at the middle and high school levels. (Table 8) The plot of the average scores for the teachers in ESP and comparison (Figure 4) showed a high degree of parallelism throughout the study period except for a reversal of the last two semesters observed. In that reversal, the average score for the comparison elementary teachers was higher than the average score for the ESP elementary teachers.

Comparing within school years, no significant differences were found between the scores for the fall and spring semesters for the teachers in the ESP or the comparison schools at the elementary or the middle school level. At the secondary level, the teachers' scores in the ESP school exhibited a significant ($p<.05$) increase in the spring semester of 1974 over the scores for the fall semester 1973, whereas the teachers' scores in the comparison school exhibited a nonsignificant decline for that school year. The average scores for the teacher interpersonal style measures for teachers observed in both the fall and spring semesters of a school year are given in Table 9. No significant differences were found between the changes within school years for the ESP and comparison schools.

Table 8: Average Teacher Interpersonal Style Scores by Level and Semester for Observed Classrooms in ESP and Comparison Schools

Level/Group	1973				1974				1975				1976	
	Spring		Fall		Spring		Fall		Spring		Fall		Spring	
	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score	N	Ave. Score
Elementary:														
ESP	16	4.06	12	1.83	16	0.19	24	2.17	24	2.29	23	2.17	14	2.50
Comparison	8	4.25	6	1.00	8	-0.75	12	1.50	12	1.58	10	3.00	10	3.70
Middle:														
ESP	8	2.50	8	-2.00	7	-0.14	2	*	2	*	2	*	10	0.00
Comparison	7	0.86	8	0.63**	8	0.13	1	*	1	*	1	*	10	1.00
High:														
ESP	14	1.00	14	-0.64	13	1.69	2	*	2	*	2	*	20	1.00
Comparison	14	0.50	14	0.36	13	0.00	1	*	1	*	1	*	20	0.65

*Number of classrooms observed fewer than 5; average score not computed.
**Scores for the classrooms in the comparison school significantly higher than the scores for the classrooms in the ESP school.
Note: Teacher interpersonal style scores have a possible range of -6 to +6.

Figure 4: Trends in Average Teacher Interpersonal Style Scores for Observed Classrooms in the ESP and Comparison Elementary Schools

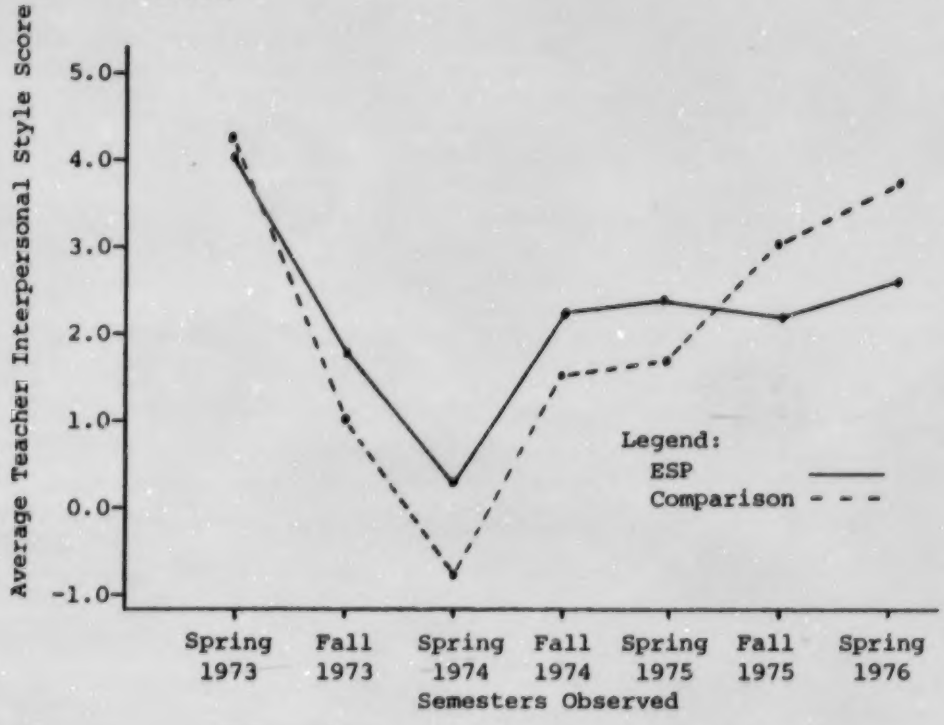


Table 9: Average Teacher Interpersonal Style Scores by Level for Teachers Observed in Both Semesters of a School Year for ESP and Comparison Schools

Level/Group	1973-1974			1974-1975			1975-1976		
		Fall	Spring		Fall	Spring		Fall	Spring
	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score	N	Ave. Score	Ave. Score
Elementary:									
ESP	12	1.83	0.58	20	2.05	2.40	14	1.71	2.50
Comparison	6	1.00	-1.33	12	1.50	1.58	9	3.44	3.67
Middle:									
ESP	7	-2.29	-0.14	2	*	*	0	*	*
Comparison	7	0.43	-0.43	1	*	*	0	*	*
High:									
ESP	10	0.00	1.70**	2	*	*	2	*	*
Comparison	13	0.46	0.00	1	*	*	1	*	*

*Number of classrooms observed for both semesters fewer than 5; average score not computed.

**Scores for spring semester classroom observations significantly higher than the scores for the fall semester observations ($p<.05$).

Dimensions of Schooling

The dimensions of schooling composite index exhibited significantly higher scores ($p<.05$) for the classrooms of the ESP schools than for the classrooms of the comparison schools. This pattern was found at the elementary level for the spring 1975 semester, and at the high school level for the spring 1976 semester (Table 10). The pattern of scores on the composite index then was analyzed further to determine what accounted for these results.

Table 10: Average Scores for Overall Dimensions of Schooling Measure by Level and Semester for Observed Classrooms in ESP and Comparison Schools

Group	Elementary				Middle	High
	Fall 1974	Spring 1975	Fall 1975	Spring 1976	Spring 1976	Spring 1976
	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.
ESP	21 1.23	24 1.69*	23 1.16	14 1.32	10 0.90	20 0.92*
Comparison	11 1.14	12 1.55	10 1.01	10 1.30	10 0.76	20 0.66

*Scores of ESP classrooms significantly higher ($p<.05$).

Note: Scores have a possible range of 0 to 3.

For the spring 1975 semester in the elementary schools, the assistance to students measure and the teacher focus measure of the dimensions of schooling composite score were significantly higher ($p<.05$). This probably accounted for the statistical significance exhibited by the overall measure. (Table 11)

Table 11: Weighted Average Scores for the Categories of Dimensions of Schooling Measure by Level and Semester for Classrooms in ESP and Comparison Schools

Level/Semester	Study Locations		Assistance to Students		Teacher Role		Teacher Focus		Selection of Materials	
	ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP
	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.
Elementary:										
Fall 1974	24 1.08	12 1.10	23 1.18	11 0.98	24 1.19	12 1.25	24 1.97	12 1.65	21 0.88	12 0.63
Spring 1975	24 1.69	12 1.69	24 1.49*	12 1.31	24 1.64	12 1.38	24 2.26*	12 2.00	24 1.34	12 1.38
Fall 1975	23 1.10	10 1.15	23 1.08	10 0.77	23 1.23*	10 0.81	23 1.80	10 1.73	23 0.59	10 0.57
Spring 1976	12 1.18	10 1.42	14 1.15	10 0.82	14 1.63	10 1.51	14 1.71	10 1.95	14 0.94	10 0.79
Middle:										
Spring 1976	10 0.73	10 0.50	10 0.95	10 0.97	10 0.71	10 0.97	10 1.28	10 1.13	10 0.89*	10 0.24
High:										
Spring 1976	20 0.60	20 0.62	20 1.04*	20 0.73	20 1.06*	20 0.72	20 1.28	20 0.96	20 0.62*	20 0.25

*Significantly higher scores for classrooms in the ESP schools, ($p<.05$).

Notes: 1) Scores have a possible range of 0 to 3; weighting factors are supplied in Appendix D.

2) ESP=Experimental School Plan schools; COMP=Comparison schools.

Other than these measures (assistance to students and teacher focus) for spring 1975, and for teacher role for the fall 1975, (where statistical significance was also exhibited), ESP was not different from comparison scores on the dimensions of schooling measure at the elementary level. In the spring 1976 high school observations, ESP was significantly more positive on the peer group assistance, the teacher role, and the selection of materials measures.

Bivariate correlations between the overall dimensions of schooling measure and the emotional climate measure were computed for the classroom scores in the ESP and comparison schools for each level and semester observed. At the elementary level, significant correlations (r=.49 and .46) were found for the ESP classrooms for the fall semesters of 1974 and 1975, respectively. No significant correlations were found for the classrooms of the comparison elementary schools. At both the middle and high school levels, the scores for both the ESP and comparison classrooms exhibited significant positive correlations between the emotional climate scores and the overall dimensions of schooling scores. (Table 12)

Table 12: Correlation Between Emotional Climate Scores and the Overall Dimensions of Schooling Measure Scores by Level and Semester for Classrooms Observed in ESP and Comparison Schools

Group	Elementary								Middle		High	
	Fall 1974		Spring 1975		Fall 1975		Spring 1976		Spring 1976		Spring 1976	
	N	r	N	r	N	r	N	r	N	r	N	r
ESP	21	.49*	24	.35	23	.46*	14	.09	10	.81*	20	.47*
Comparison	11	.37	12	-.14	10	.40	10	-.20	10	.63*	20	.59*

*Correlation significantly different from zero at $p<.05$.

Analyses at the individual item level also were conducted to determine what accounted for patterns of data found for the dimensions of schooling composite index and its five categories. The individual indices consist of 18 statements concerning teacher or student activities which may occur during the classroom observation period. These 18 statements are grouped into five categories: study locations, assistance to students, teacher role, teacher focus, and selection of materials. (See Appendix D.)

For each statement, the Mann-Whitney U test was used to analyze differences between scores for classrooms in the ESP and comparison schools. These analyses were performed separately for each semester. The results from the statistical analyses, however, are not emphasized as much as the trends and occurrences explicitly shown by the data because the results provided meaningful information in only a few instances.

Table 13: Average Dimensions of Schooling Study Locations Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	A. Study and other activities take place at the student's desk.				B. Study and other activities take place in a number of different locations (centers) in the classroom area.				C. Study and other activities take place in a number of different locations (centers) within the school.			
	ESP		Comparison		ESP		Comparison		ESP		Comparison	
	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average
Elementary:												
Fall 1974	24	1.13	12	1.58	24	2.67	12	2.00	24	0.0*	12	0.33
Spring 1975	24	1.50	12	1.67	24	2.83	12	2.50	24	1.00	12	1.17
Fall 1975	23	1.57	10	1.10	23	2.26	10	2.60	23	0.17	10	0.20
Spring 1976	14	1.43	10	0.80	14	2.71	10	2.80	14	0.07*	10	0.70
Middle:												
Spring 1976	10	3.00	10	3.00	10	0.70	10	0.0	10	0.0	10	0.0
High:												
Spring 1976	20	2.80	20	2.90	20	0.25	20	0.25	20	0.10	20	0.10

*ESP significantly ($p<.05$) lower than comparison.

Scores: 0=no occurrence; 1=little occurrence; 2=occurs some of the time; 3=occurs frequently.

Study Locations

Three statements of activity comprise the category of study locations. They are:

A. Study and other activities take place at the student's desk.
B. Study and other activities take place in a number of different locations (centers) within the classroom area.
C. Study and other activities take place in a number of different locations (centers) within the school.

As can be seen in Table 13, the highest frequency of occurrence in the elementary schools was for statement B. It was consistently the highest for the four semesters from fall 1974 through spring 1976, both for the classrooms in ESP as well as in the comparison schools. Statistically significant differences ($p<.05$) were shown for statement C, study takes place in different locations in the school, for the fall semester of 1974 and the spring semester of 1976. The comparison classrooms were higher in both cases. For the middle and high schools, statement A, study and other activities at the student's desk, was noted as occurring most frequently for both the classrooms in the ESP and comparison schools. Studying at locations other than the student's desk, statements B and C, were noted to have occurred infrequently, if at all, at these levels.

Assistance to Students

For the student assistance category, three statements concerning student and teacher activities were used:

A. Students independently seek assistance in their schoolwork from peers or other students.
B. There is student-to-student assistance on a somewhat formal teacher initiated basis.
C. Assistance comes from the teacher.

As seen in Table 14, the teacher was the most frequently used assistance source for all semesters in the elementary, middle, and high schools. The frequencies of assistance from the teacher and of assistance from peers, the latter sought independently, remained practically constant throughout the study period in the observed ESP classrooms. Statistical significance was noted for statement A, students independently seeking assistance from peers, for the spring semesters of 1975 and 1976. For both semesters, the scores for the ESP classrooms were higher. For statement C, assistance from the teacher, the scores in the ESP elementary classrooms were significantly higher in the fall semester of 1974, and significantly lower in the fall of 1975, than the scores for the comparison classrooms for the respective semesters. There was no difference between ESP and comparison, however, in spring 1976. The ESP teacher assistance score remained quite stable across the four semesters; teacher assistance tended to increase during the period in comparison. Additionally, in the fall semester of 1975 and the spring semester of 1976, the use of teacher assistance was almost to the complete exclusion of assistance from peers, either independently or teacher initiated.

In the ESP middle and high schools, the sources of assistance and the frequencies of occurrence were comparable to those for the elementary schools. The frequency of usage of the teacher for assistance in the

Table 14: Average Dimensions of Schooling Assistance to Students Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	A. Students independently seek assistance in their school-work from peers or other students.				B. There is student-to-student assistance on a somewhat formal teacher initiated basis.				C. Assistance comes from the teacher.			
	ESP		Comparison		ESP		Comparison		ESP		Comparison	
	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average
Elementary:												
Fall 1974	24	1.04	11	0.82	23	0.61	12	1.00	24	2.71*	12	1.75
Spring 1975	24	1.29*	12	1.00	24	1.04	12	1.00	24	3.00	12	2.83
Fall 1975	23	1.17	10	0.40	23	0.30	10	0.20	23	2.35*	10	3.00
Spring 1976	14	1.00*	10	0.50	14	0.64	10	0.20	14	2.64	10	3.00
Middle:												
Spring 1976	10	1.20	10	0.90	10	0.0	10	0.10	10	2.10*	10	2.90
High:												
Spring 1976	20	1.15	20	0.90	20	0.15	20	0.0	20	2.50*	20	1.70

*Significantly different scores for the classroom in ESP and comparison school(s).
Scores: 0=no occurrence; 1=little occurrence; 2=occurs some of the time; 3=occurs frequently.

ESP high school was significantly higher ($p<.05$) than the frequency of teacher assistance in the comparison high school. It should be noted also that a low frequency of assistance was recorded from any of the three sources of assistance for the comparison high school.

Teacher Role

The teacher role category of the dimensions of schooling indices is comprised of four statements concerning certain teacher activities relative to the instructional process. The statements were:

A. The teacher acts as a resource person to whom students come when seeking information and ideas.
B. The teacher acts as a discussion leader on topics initiated by the students.
C. The teacher acts as a discussion leader on topics of his/her choice.
D. The teacher acts as a presenter or planned lessons.

As can be seen on Table 15, the most frequently observed teacher role in the elementary schools was as the presenter of planned lessons, statement D. The teacher roles of resource person for information and ideas, and as discussion leader on topics of his/her choice, also occurred with some degree of frequency for the ESP elementary schools for all semesters, but especially so in spring 1976. In that semester, the frequency of occurrence of the role of teacher as the presenter of planned lessons was significantly greater in the classrooms of the comparison elementary schools than those of ESP. The role of the teacher as discussion leader on topics of his/her choice was significantly more frequent in the elementary schools for the spring semester of 1975 ($p<.05$).

Teacher Focus

For the teacher focus indices of the dimensions of schooling, three statements were used to define to whom the teacher directed his/her attention:

A. The teacher directs attention to the class as a whole.
B. The teacher directs attention to subgroups of the class.
C. The teacher directs attention to individual students.

The highest average scores for frequency of occurrence was for statement B for both the classrooms in the ESP elementary and in the comparison elementary schools. (Table 16) This occurred for each of the four semesters; furthermore, no significant differences were found between the scores for either set of classrooms for the four semesters. Hence, this type of teacher focus, attention to subgroups, seemed to be a characteristic of the elementary schools included in this study. Additionally, for the middle and high schools, spring semester 1976, the average frequency of occurrence for statement B was the lowest for both the ESP and comparison school classrooms. The lowest average frequency of occurrence in the classrooms of the elementary schools was for statement A, the teacher directs attention to the class as a whole. Based on the average scores for statement A, little or no occurrence of this type of teacher focus was observed for any semester in the elementary schools.

The classrooms in the ESP schools at all three levels exhibited numerically higher average frequency scores for individual attention to students over those for the classrooms in the comparison schools (statement C).

Table 15: Average Dimensions of Schooling Teacher Role Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	A. Teacher acts as a resource person to whom students come when seeking information and ideas.				B. Teacher acts as a discussion leader on topics initiated by the students.				C. Teacher acts as a discussion leader on topics of his/her choice.				D. Teacher acts as a presenter of planned lessons.			
	ESP		Comparison		ESP		Comparison		ESP		Comparison		ESP		Comparison	
	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average
Elementary:																
Fall 1974	24	1.17	12	0.92	24	0.75	12	1.00	24	1.13	12	1.58	24	2.71	12	2.67
Spring 1975	24	1.58	12	1.33	24	1.04	12	1.00	24	1.96*	12	1.25	24	3.00	12	2.92
Fall 1975	23	1.61	10	0.80	23	0.26	10	0.20	23	1.04	10	0.70	23	2.96	10	2.90
Spring 1976	14	2.29	10	1.80	14	0.21	10	0.50	14	2.07	10	1.70	14	2.36*	10	3.00
Middle:																
Spring 1976	10	1.20	10	1.80	10	0.0	10	0.10	10	0.0	10	0.0	10	2.30	10	2.20
High:																
Spring 1976	20	2.20*	20	0.95	20	0.20	20	0.10	20	0.20	20	0.10	20	0.80*	20	2.90

*Significantly different scores for the classrooms in ESP and comparison schools.
Scores: 0=no occurrence; 1=little occurrence; 2=occurs some of the time; 3=occurs frequently.

Table 16: Average Dimensions of Schooling Teacher Focus Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	A. Teacher directs attention to the class as a whole.				B. Teacher directs attention to subgroups of the class.				C. Teacher directs attention to individual students.			
	ESP		Comparison		ESP		Comparison		ESP		Comparison	
	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average
Elementary:												
Fall 1974	24	0.79	12	1.08	24	2.63	12	2.67	24	1.92*	12	1.17
Spring 1975	24	1.29	12	1.58	24	2.83	12	2.58	24	2.21	12	1.75
Fall 1975	23	0.52	10	0.20	23	2.74	10	3.00	23	1.61	10	1.40
Spring 1976	14	0.43	10	1.60*	14	2.36	10	2.80	14	1.71	10	1.50
Middle:												
Spring 1976	10	0.70	10	1.80	10	0.20	10	0.40	10	2.20	10	1.40
High:												
Spring 1976	20	1.45	20	2.15	20	0.20	20	0.45	20	1.95*	20	0.90

*Significantly different scores for classrooms in ESP and comparison schools at $p<.05$.
Scores: 0=no occurrence; 1=little occurrence; 2=occurs some of the time; 3=occurs frequently.

This pattern occurred in all semesters observed in the middle and high schools and the difference was very marked. Statistical significance was associated with the numerical superiority in the fall of 1974 in the elementary schools and in the spring of 1976 in the high schools.

On the other hand, the average frequency of occurrence scores tended to be higher for the comparison classrooms at all levels for statement A than for the ESP classrooms. The most marked examples of this were for the spring semester of 1976 where at the elementary, middle, and high school levels, the comparison classrooms had higher average frequency scores (between 0.70 to 1.17 points higher) than in the ESP classrooms. Statistical significance was exhibited for elementary school differences.

In summary, at the elementary level, teacher focus in the ESP and comparison classrooms was predominantly toward subgroups within the classes. Teacher focus directed at individual students occurred more frequently in the ESP classrooms than in the comparison classrooms. At the middle school level, the teacher focus was mostly directed toward individual students in the ESP classrooms, whereas in the comparison classrooms an almost exact split existed between attention focused on individuals and on the class as a whole. In the high schools, teacher focus was primarily directed at individual students in the ESP classrooms, while teacher attention was mostly directed toward the class as a whole in the comparison classrooms.

Selection of Materials

The final category of indices for the dimensions of schooling is the selection of materials. Its statements were:

A. Students choose for themselves from all the materials available and may bring in materials from outside the classroom.
B. Students choose from alternatives suggested by the teachers.
C. Students are assigned materials prescribed for them individually.
D. Students are assigned materials prescribed for members of their subgroup of the class.
E. Students are assigned materials prescribed for all members of their class.

The pattern for selection of materials, as seen from Table 17, followed the pattern shown in the teacher focus category. That is, at the elementary level, the selection of materials was based on subgroups in the classrooms, and no substantial differences were shown between the ESP and comparison school classrooms. The comparison elementary schools were significantly higher on statement E, same materials for all members of the class, than were the ESP schools.

In the ESP middle school classrooms, the predominant average frequency of occurrence was for subgroup assignment of materials, but to a lower extent than in the elementary schools. However, no single statement was given a very high frequency of occurrence in the ESP middle school classrooms. This was contrary to the comparison middle school where it was observed that the assignment of the same materials to all members of the

Table 17: Average Dimensions of Schooling Selection of Materials Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	A. Students choose for themselves from all the materials available, and may bring in materials from outside the classroom.		B. Students choose from alternatives suggested by the teacher.		C. Students are assigned materials prescribed for them individually.		D. Students are assigned materials of their subgroup of the class. (Same materials for all students in the same subgroup; different materials for each subgroup.)		E. Students are assigned materials prescribed for members of their class. (Same materials for all students in the same class.)	
	ESP	COMP.	ESP	COMP.	ESP	COMP.	ESP	COMP.	ESP	COMP.
	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.	N Ave.
Elementary:										
Fall 1974	21 0.43	12 0.25	24 0.79	12 0.25	24 1.13	12 0.67	24 2.33	12 2.25	24 0.96	12 0.75
Spring 1975	24 1.00	12 1.00	24 1.25	12 1.25	24 1.08	12 1.25	24 2.67	12 2.83	24 1.50	12 1.33
Fall 1975	23 0.04	10 0.00	23 0.13	10 0.20	23 0.74	10 0.50	23 2.78	10 3.00	23 0.30	10 0.20
Spring 1976	14 0.36	10 0.20	14 1.00	10 0.50	14 1.14	10 0.70	14 2.29	10 2.60	14 0.36*	10 1.60
Middle:										
Spring 1976	10 0.00	10 0.00	10 1.30*	10 0.00	10 0.80*	10 0.00	10 1.90*	10 0.60	10 1.20	10 2.40
High:										
Spring 1976	20 0.40	20 0.00	20 0.40*	20 0.00	20 1.40*	20 0.05	20 0.15	20 0.35	20 1.25*	20 2.8

*Significantly different scores for classrooms in ESP and comparison schools.
Scores: 0=no occurrence; 1=little occurrence; 2=occurs some of the time; 3=occurs frequently.

class predominated. The statistical analyses showed that the frequencies for three of the five indicators were significantly higher ($p<.05$) for the ESP middle school classrooms (statements B, C, and D). (Table 17)

Language Usage - Written Materials

Except for the state adopted texts and a few additional commercial materials in Spanish at grades one and two, plus an occasional teacher made unit or poster, the materials noted were mostly in English. The ESP produced materials and those utilized in the comparison high school, also staff produced, were entirely in English. There were no differences between the ESP and comparison classrooms in the language of the materials they used.

Skill Domains

The skill domains component of the M/OScAR instrument was to be utilized to measure the effects of the communication skills project, designed and implemented by the experiemental program, to increase the language arts achievement of the pupils. This component was divided into the four language arts skill domains of listening, reading, writing, and verbal.

No substantial differences were found between the average emphasis scores for the ESP and comparison classrooms. The ESP and comparison elementary teachers displayed, on the average, either moderate or high emphasis on reading skills for all semesters. (Table 18) In both middle schools, for the spring semester of 1976, greater emphasis was placed on writing skills and the lowest emphasis was placed on verbal skills. The teachers in the ESP and comparison high schools were also rated as placing low emphasis on verbal skills, and between low and moderate emphasis on the other skill domains.

In summary the skill domains components detected no substantial differences between the ESP and comparison teachers' emphasis on the language arts skills domain. Reading skills tended to be emphasized more than the others at the elementary level. In the middle schools, writing skills were emphasized. In both the middle and high schools, verbal skills received the lowest emphasis among the four skill areas.

Language Usage - Oral

This component of the instrument was incorporated into M/OScAR to measure the classroom language usage of English, Spanish, or an approximately equal mixture of both. The instructional and non-instructional interchanges that were noted were:

- initiated by the teacher and directed toward the pupils,
- occurred among the pupils, and
- initiated by the pupils and directed toward the teacher.

The interchanges were noted for each of three five-minute observation periods. A total of eighteen indicators comprised this component.

Table 18: Average Skill Domains Emphasis Scores for the Observed Classrooms in ESP and Comparison Schools by Level and Semester

Level/ Semester	Listening				Reading				Writing				Verbal			
	ESP		Comparison		ESP		Comparison		ESP		Comparison		ESP		Comparison	
	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average	N	Average
Elementary:																
Fall 1974	24	1.67	12	1.83	24	1.88	12	2.75	24	1.50	12	0.83	24	2.17	12	1.92
Spring 1975	24	1.96	12	2.25	24	2.54	12	2.25	24	1.04	12	1.17	24	1.67	12	1.58
Fall 1975	23	1.83	10	1.60	23	1.96	10	2.50	23	1.00	10	0.70	23	1.83	10	2.10
Spring 1976	13	1.54	10	1.70	14	2.14	10	2.00	14	0.64	10	1.00	14	1.93	10	2.00
Middle:																
Spring 1976	10	1.10	10	1.40	10	1.60	10	2.40	10	2.40	10	2.10	10	0.80	10	0.90
High:																
Spring 1976	20	1.35	20	1.70	20	1.85	20	1.45	20	1.40	20	1.95	20	0.90	19	0.95

Scores: 0=no emphasis; 1=low emphasis; 2=moderate emphasis; 3=high emphasis.

To facilitate instruction, students in the ESP and comparison elementary schools were grouped according to language dominance. These groups generally consisted of whole classes but in some cases subgroups within a class were to be instructed in Spanish, English, or bilingually.* For each of the observed classes, therefore, the teacher was asked to indicate the designated language of instruction. The ESP middle and high school students were also grouped by language of instruction, either bilingual or English. All comparison school classes were designated for English instruction. The Spanish and bilingual designations were combined into a single Spanish/bilingual category for this study. Prior to the analysis of the observed use of language in the classes, a breakdown by language designation was prepared for ESP and comparison groups by level for the fall 1974 to spring 1976 observations. Table 19 shows the distribution. For each level and designated language of instruction, only those semesters in which 10 or more classes were observed were analyzed by formal statistical procedures. The proportions of classes in the ESP and comparison schools in which a particular language usage occurred, were compared. Two types of statistical procedures were used, Fisher's Exact test for 2 by 2 tables when the number was smaller than 20 and the Chi Square test for 2 by 2 tables for those with larger numbers of classrooms.

Table 19: Number of Observed ESP and Comparison Classrooms by Designated Language of Instruction, Level, and Semester: Fall 1974 to Spring 1976

Level/ Semester	Spanish/Bilingual			English		
	Total	ESP	Comparison	Total	ESP	Comparison
Elementary:						
Fall 1974	24*	18	6	12*	6	6
Spring 1976	23*	17	6	13*	7	6
Fall 1975	29*	20	9	4	3	1
Spring 1976	18*	10	8	6	4	2
Middle:						
Fall 1974	1	1	0	2	1	1
Spring 1975	2	2	0	1	0	1
Fall 1975	2	2	0	1	0	1
Spring 1976	1	1	0	19*	9	10
High:						
Fall 1974	1	1	0	2	1	1
Spring 1975	1	1	0	2	1	1
Fall 1975	1	1	0	2	1	1
Spring 1976	0	0	0	40*	20	20

*Significance testing on the language usage-verbal indicators for differences between the classrooms in the ESP and comparison schools were performed on these data only.

*During one year, the ESP elementary students were grouped into Spanish dominant, bilingual, and English dominant. For a case study of the instrument used, student placement, and results, see Cervantes, Theimer, & Jones (20).

From the analysis of the differences between the classrooms of the ESP schools and the classrooms of the comparison schools based on these indicators, only at the high school level was there significant differences on more than one of the indicators in a semester. In the high schools for the spring semester of 1976, a pattern emerged among some of the indicators. This pattern was that non-instructional interchanges initiated by the teacher and directed toward the pupils, and interchanges initiated by the pupils and directed toward the teacher, occurred in English in almost all classrooms of the ESP school, but occurred in only a few of the classrooms in the comparison high school. Additionally, instructional and non-instructional use of English in interchanges among the pupils occurred more frequently in the classrooms of the ESP school. On the other hand, instructional usage of both English and Spanish, and non-instructional usage of Spanish, occurred among the pupils in over half the classrooms of the comparison high school, but in only a very few classrooms in the ESP high school.

CHAPTER V: DISCUSSION AND CONCLUSIONS

The experimental schools project of the Edgewood Independent School District, San Antonio, Texas, designed and implemented a special program under the auspices of the National Institute of Education to improve the academic achievement of its predominantly Mexican American student body. The project, called the Edgewood School Plan (ESP), attempted to improve the affective and cognitive environment of the students through encouraging the use of Spanish, adding culturally relevant materials to the curriculum, and enhancing pupil/teacher relationships. This latter included both the instructional techniques and classroom management.

The present report is one of a series produced under contract by the external evaluation team of Development Associates in the research into the several aspects and results of the program. Specifically, the instrumentation utilized were the 2a version of the Observation Schedule and Record (OScAR 2a) for the first two years of the four year program, then a revision of portions of OScAR 2a (with project specific additions), termed the Modified Observation Schedule and Record (M/OScAR) for the last two years. The study was parallel to other research the first two years and employed very small samples of experimental and comparison schools. Subsequently, the scope of the study was changed to more fully document possible changes produced by the program and the samples were greatly enlarged. Classes were monitored for seven semesters by intensively trained observers, spring 1973 through spring 1976.

Discussion

The emotional climate measure, pupil/teacher interactions, was an abbreviated version of that included in OScAR 2a and was used throughout the seven semesters of observations. The individual scores were mostly positive; negative climate scores generally accounted for less than 15% of the observations. No significant differences were found between the treatment and comparison schools' elementary, middle, or secondary classrooms. A trend of increasingly positive scores was exhibited for both groups across the observations and their patterns were parallel. It seems apparent that programmatic development in the two groups of schools, ESP and comparison, although different in several respects, had not resulted in different emotional climate scores.

Teacher interpersonal style, an examination of the supportive and reproving aspects of the classroom process, likewise showed positive scores in nearly all observations. There were no important differences between ESP and comparison. A trend of increasingly positive scores was found from the fall 1974 to the spring 1976 observations in the elementary classrooms, which was present for both groups of schools. The trend was not present for the middle and secondary schools. Again, differences in program were not associated with differential results in teacher interpersonal style between the treatment and comparison schools.

Teacher emphasis on the four skill domains in the language arts (listening, reading, writing, verbal) remained quite constant in both groups of

schools across the observations from fall 1974 through spring 1976, the only semesters in which this measure was included in the instrument. Instructional emphasis on listening, reading, and writing occupied most of the class time; verbal participation by the students occurred in distinctly minor amounts in the middle and high schools. In the elementary schools, instructional emphasis on listening, reading, and verbal skills occupied most of the classroom time. Increased emphasis on this latter domain, as planned in the ESP communications skills project during this period, did not appear to have altered the classroom pattern.

The experimental schools project had also proposed to increase the use of Spanish in both instruction and classroom management, and at the same time to strive for improvement in English. Measurement of language usage showed no important differences between ESP and comparison classes at the elementary school level across the years and at the middle school level for the spring 1976 semester. Although English predominated, there was a considerable number of Spanish only and bilingual classes observed. The proportion of teacher/student and student/student English non-instructional interchanges in the ESP high school, however, was significantly greater than in the comparison high school in 1976. On the other hand, student/student bilingual instructional and Spanish non-instructional interchanges were significantly more frequent in the comparison high school classes than in the ESP classes. That is, there was more Spanish spoken in the comparison than in the ESP classes. Program effect inferences were difficult to draw from this result because of the dual Spanish/English thrust of the treatment project. Increased English facility could have resulted in the observed increase in English usage. On the other hand, ESP intended to substantially increase the use of Spanish, both for cognitive and affective enhancement. The lower incidence of usage in the ESP high school did not appear to support that design.

The dimensions of schooling measures accounted for a majority of the differences found in the study and most of them were at the high school level and from the spring 1976 data. In general, the results at the three levels were:

Elementary: Both the ESP and comparison classrooms were organized predominantly around subgroups of pupils.

- Attention to the class as a whole occurred rarely whether in teacher focus, role, or assignment of materials.
- ESP elementary teachers increased their attention to individuals during the period and significantly more than comparison in spring semester 1976; the frequency of occurrence, however, was still far below that of work with subgroups.
- Using the teacher as a resource person, though much less frequent than the teacher as a presenter of lessons, was significantly greater for ESP than comparison classrooms in spring 1976.

Middle: ESP and comparison middle school classrooms were nearly alike on study locations, teacher focus, and teacher role.

- The three measures showed "class as a whole" as the primary focus with some attention to subgroups.

- In selection of materials, however, the ESP classrooms were significantly higher for attention to individuals and subgroups than were the comparison schools.

Secondary: Classrooms in the ESP and comparison classrooms were not different on where study took place; both predominantly used "at the student's desk." The other dimensions showed variation.

- In both high schools, most assistance came from the teacher; in spring 1976, that occurrence was significantly greater for ESP.
- A dual move toward openness as measured by this instrument occurred in spring 1976; the use of the teacher as a resource person was significantly greater for ESP than comparison, and concomitantly, the role of the teacher as a presenter of planned lessons was significantly lower in ESP.
- Teacher focus on individuals was significantly more frequent in ESP than in comparison in spring 1976.
- The selection of materials for individuals was significantly greater in ESP; selection of materials for the class as a whole was significantly lower in ESP.

The experimental school plan had set out to provide for individual differences. Orientation sessions, inservice training, and teacher conferences had emphasized individualization. With the exception of mathematics, however, materials specifically designed for individualized instruction were not provided until the fall semester of 1975. By the time of the spring 1976 semester's observations, the teachers had had about seven months experience with these materials and at every level, practices related to individualization increased (although not always statistically significant) in ESP classes during the last year. By spring 1976 they were significantly higher than in comparison. This was particularly true at the secondary level, despite the introduction into the comparison high school of individualization materials packets (but with little teacher training for their use). The emphasis on individualization in staff development and orientation for about three years, the existence of a well organized best paced mathematics program in the ESP middle and high schools for about two years, and finally the provision of materials specifically designed for individualization - this combination appeared to be associated with the increases in the observed practices in individualized instruction. Of interest also to practitioners was that greater exposure to individualization seemed to have been related to greater intensity of the practices. Elementary teachers had few opportunities to observe individualization in action; middle and high school teachers had nearly two years to evaluate best paced mathematics and the intensity of their individualization practices was much greater than at the elementary level.

Conclusions

The Modified Observation Schedule and Record, a combination of measures, was designed to probe the effects of special features of the Edgewood School Plan plus the general environment for learning as delineated in other research studies. The specific measures, according to the experimental program's rationale, would provide a more positive climate, which

would enhance the affective characteristics of the students, which would in turn, result in higher academic achievement.

A fairly constant orientation toward, and some inservice training on how to carry out individualization during the first three program years, was not accompanied by observed substantial individualized practices in the classroom. The middle and secondary teachers were provided individualized mathematics materials beginning in the second program year, and most teachers were given that type of instructional material the fall of the fourth year. Individualization practices were observed in the third program year, and these were fairly common by the spring of the fourth year. The nearly inescapable conclusion is that training in new practices will not, by itself, bring about many changes in instruction. It would appear from this study, however, that when:

- training is conducted,
- opportunities to evaluate exist,
- the necessary materials are provided,

then the practice, if worthwhile, is likely to be adopted. If the results of the present study are representative, importance must be placed on the combination of the three factors. When training and evaluation but no materials were present, adoption did not occur. Conversely, when materials were provided but with little or no training or evaluation, again, adoption did not occur. All three appear to be necessary ingredients.

Language usage, both oral and written, was preponderantly in English in ESP. The comparison schools' written materials were also mostly in English. Oral usage in Spanish was greater in the comparison schools. Thus, despite the ESP thrust toward increasing Spanish, the data did not support that result. It would appear, however, that the preponderance of English materials could have had a stimulus effect toward using English when they are discussed. Since the comparison schools also used English materials, and yet students and teachers used Spanish more frequently than in ESP, no conclusion on language usage was reached.

Teacher interpersonal style was generally positive in the classrooms and no important differences were found between the experimental and comparison schools. The items in that scale appear, in content, to be closely related to the items in the emotional climate measure. Analyses usually showed them to be significantly correlated. As would be expected, then, the emotional climate scores were generally positive and no important differences existed between ESP and comparison. The generally consistent goals and orientation of ESP, the staff development, and the observed moves toward individualization, as implemented in this experimental schools project, had not produced differential significant effects in the general learning environment by the end of its fourth year of operation.

Viewing some significant effects found during the fourth year studied through the classroom observations, coupled with a few significant effects in achievement, described in Welch (103), for that same year, the possibility remained that if the 1975-1976 implementation were continued, improvement might result. Other Development Associates studies (19, 28) had also discovered what appeared to be achievement increases associated with short term, highly individualized programs, even though a longitudinal study (17) over the four years found experimental and comparison achievement

levels to be generally alike. Although speculative, the results of the present study, veiwed with the results of others of this same program, lead to the conclusion that goals and orientation, when inconsistently implemented, will not produce substantial long term improvement in the learning environment.

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APPENDIX A

Modified Observation Schedule and Record (M/OScAR)

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Modified Observation Schedule and Record

Section I: Descriptive Categories

Obs: _____ Date: _____

T.N.: _____ School: _____

T.E.: (A) (B) (MA) Time: _____

No. of Aides: _____ Class Designation: (Tr) (NT) (C)

E. of Aides: (A) (B) (MA) If Tr D.L. Class: (S) (E) (Other)

No. of Pr. V.: _____ No. of P.: (A) (B) (MA)

E. of Pr. V: (A) (B) (MA) Subject Matter: _____

Section II: Language Usage - Oral (Single Tally)

	Instructional									Non-Instructional								
	S			E			S/E			S			E			S/E		
	2	4	6	2	4	6	2	4	6	2	4	6	2	4	6	2	4	6
T-P																		
P-P																		
P-T																		
A-P																		
P-A																		
Pr-P																		
P-Pr																		

Section III: Teacher Interpersonal Styles (Frequency Counts)

	2	4	6	Total
K1 lk gst app/aff				
K2 p supp v				
K6 rpvg v				
K7 rpvg lk gst				

Section IV: Emotional Climate (Single Tally)

	3	5	7	Total
A5 t ign p qu				
F1 p ign t qu				
F4 p lghs				
S2 t mvs frly				
S3 p mvs frly				
S5 t cls p dr, etc. (v)				
S6 t shws afct f p (B)				
S7 P shws afct f t (B)				
S8 p shws neg afct t t (B)				
S9 t shws neg afct t p (B)				
S10 t use srcsm				
S11 t yls				

Section V: Language Usage - Written (Single Tally)

	S	E	S/E
Commercial Texts			
Teacher Produced Texts			
Audio-Visuals			
Games			
Graphics			
Teaching aids			

Section VI: Skill Domains (last 20 minutes)

	60 - 100% High Emphasis	30 - 59% Moderate Emphasis	1 - 29% Low Emphasis	0 None
Listening				
Reading				
Writing				
Verbal				

Comments:

Strengths	Weaknesses	Unusual Conditions

Section VII: Dimensions of Schooling

0. None
1. Little occurrence
2. Occurs some of the time
3. Occurs frequently

1. Study Locations

A. Study and other activities take place at the student's desk.	0	1	2	3
B. Study and other activities take place in a number of different locations (centers) within the classroom area.	0	1	2	3
C. Study and other activities take place in a number of different locations (centers) within the school.	0	1	2	3

2. Assistance to Students

A. Students independently seek assistance in their schoolwork from peers or other students.	0	1	2	3
B. There is student-to-student assistance on a somewhat formal teacher-initiated basis.	0	1	2	3
C. Assistance comes from the teacher.	0	1	2	3

0. No occurrence
1. Little occurrence
2. Occurs some of the time
3. Occurs frequently

3. Teacher Role

A. The teacher acts as a resource person to whom students come when seeking information and ideas.	0	1	2	3
B. The teacher acts as a discussion leader on topics initiated by the students.	0	1	2	3
C. The teacher acts as a discussion leader on topics of his/her choice.	0	1	2	3
D. The teacher acts as a presenter of planned lessons.	0	1	2	3

4. Teacher Focus

A. The teacher directs attention to the class as a whole.	0	1	2	3
B. The teacher directs attention to sub-groups of the class.	0	1	2	3
C. The teacher directs attention to individual students.	0	1	2	3

5. Selection of Materials

A. Students choose for themselves from all the materials available and may bring in materials from outside the classroom.	0	1	2	3
B. Students choose from alternatives suggested by the teacher.	0	1	2	3
C. Students are assigned materials prescribed for them individually.	0	1	2	3
D. Students are assigned materials prescribed for members of their sub-group of the class. (Same materials for all students in the same sub-group; different materials for each subgroup).	0	1	2	3
E. Students are assigned materials prescribed for all members of their class. (Same materials for all students in the same class.)	0	1	2	3

APPENDIX B

Observer Guide for Use of M/OScAR Instrument

Observer Guide
for Use of M/OScAR

Adolfo H. Munoz III

A. Description and Rationale

The DA Classroom Observation Schedule consists of seven sections which are designed to record and document specific areas of classroom dynamics. The seven sections of the schedule are as follows:

Section I:	Descriptive Categories
Section II:	Language Usage - Oral
Section III:	Teacher Interpersonal Styles
Section IV:	Emotional Climate
Section V:	Language Usage - Written
Section VI:	Skill Domains
Section VII:	Dimensions of Schooling

Two major criteria guided the selection of these seven areas:

- the documentation of student treatments as specified by the ESP project
- the documentation of classroom variables that appear to have explanatory potential given Level II findings to date.

B. Observation Time

Total observation time is approximately 50 minutes. Time allotment is as follows:

Observation Period*	Section to be Completed
1	I
2, 4, 6	II & III
3, 5, 7	IV
8	V & VI
9	VII

C. Procedure

The observer first completes the descriptive categories in Section I. Five minutes is an approximate time frame for completion of this section. The observer may proceed with observation period 2 as soon as section I is complete.

*Five-minute observation periods.

Observation periods 2, 3, 4, 5, 6, and 7 are timed. The observer alternates between sections II and III (completed simultaneously) and section IV. Section II, Language Usage - Oral, is not a frequency table. The observer records, at the end of five minutes whether Spanish, English, or an equal combination thereof was predominant in interchanges between the specified groups in (1) instructional discourse and, (2) non-instructional discourse. It is important to note that S-E refers to equal use of English and Spanish not merely the use of both languages. Section III, Teacher Interpersonal Styles, which is completed together with Section II during observation periods 2, 4, 6, is a frequency table. The observer marks the appropriate category each time the specified behavior is observed. Section IV, Emotional Climate, is a tally table. Procedures are identical to those presented above for Section II.

After all other sections have been completed, the observer marks Sections V, VI, and VII on the basis of processes and behaviors that have occurred throughout the session. In Section V, Language Usage - Written, the observer records the language used most often in the materials specified. Only those materials actually used during the observed class session are to be included in written language categorization. As for Section II, S-E refers only to equal use of both languages. Section VI, Skill Domains, requires that the observer classify the emphasis placed on each of the four skill domains as either high, medium, low, or none. For operational purposes the categories are defined as follows:

- High Emphasis: The instructor addresses a given skill domain 60 to 100% of the time during the entire observation.
- Moderate Emphasis: The instructor addresses a given skill domain 30 to 59% of the time during the entire observation.
- Low Emphasis: The instructor addresses a given skill domain up to 29% of the time during the entire observation.
- None: The instructor does not address any of the given skill domains.

In section VII, Dimensions of Schooling, the observer is required to rate various activities as to the frequency of their occurrence during the entire observation session. The ratings are defined as follows:

(0) No occurrence: does not occur at all.
(1) Little occurrence: the specified activity occurs less than 25% of the time during the entire observation.
(2) Occurs some of the time: the specified activity occurs between 25 and 50% of the time during the entire observation.
(3) Occurs very frequently: the specified activity occurs more than 50% of the time during the entire observation.

D. Codes

Certain categories in the schedule have been coded and/or abbreviated. Following is a list of these by section with corresponding decoding.

	CODE/ABBREVIATION	FULL ITEM
I.	Obs	Observer
	T.N.	Teacher Name
	T.E.	Teacher Ethnicity
	A	Anglo
	B	Black
	MA	Mexican American
	No. of aides	Number of Aides
	E. of Aides	Ethnicity of Aides
	No. of Pr. V.	Number of Parent Volunteers
	E. of Pr. V.	Ethnicity of Parent Volunteers
	Tr	Treatment
	NTr	Non-Treatment
	C	Comparison
	D.L. Class	Dominant Language of class (as specified by ESP Project)
	S	Spanish
	E	English
	No. of P.	Number of Pupils
II.	T-P	Teacher-Pupil
	P-P	Pupil-Pupil
	P-T	Pupil-Teacher
	A-P	Aide-Pupil
	P-A	Pupil-Aide
	Pr-P	Parent Volunteer-Pupil
	P-Pr	Pupil-Parent Volunteer
III.	K1 lk gst app/aff	Look or gesture of approval/ affection
	K2 p sugg v	Pupil-Supportive (verbal)
	K6 rpvg v	Reproving verbal
	K7 rpvg Lk gst	Reproving look or gesture
IV.	A5 t ign p qu	Teacher ignores pupil question
	F1 p ign t qu	Pupil ignores teacher question
	F4 p lghs	Pupil laughs
	S2 t mvs frly	Teacher moves freely
	S3 p mvs frly	Pupil moves freely
	S5 t cls p dr, etc.	Teacher calls pupil dear, etc.
	S6 t shws afct f p	Teacher shows affection for pupil
	S7 p shws afct f t	Pupil shows affection for teacher
	S8 p shws neg afct t t	Pupil shows negative affect toward teacher
	S9 t shws neg afct t p	Teacher shows negative affect toward pupil
	S10 t use srcsm	Teacher uses sarcasm
	S11 t yls	Teacher yells

Skill Domains - Definitions

Listening

Activities designed to improve aural skills: teacher reading stories or other material, sound recognition, sound contrasts, word recognition (AURAL).

Reading

Activities designed to aid students in decoding written symbols or materials: flashcards, board, books, silent and aloud reading.

Writing

Activities designed to teach students how to graphically express ideas (encoding), penmanship, and related graphic skills.

Verbal

Activities to aid students in oral expression skills: diction, enumerations, grammar. (N.B. some activities will fall into the verbal and other categories.)

In order to minimize ambiguity and to answer questions that arise in the field, try to interpret the OScAR 2a categories as though they all began by saying:

"With respect to, or as part of the instructional process..."

A5 "Teacher ignores pupil question"

The teacher somehow shows that she knows a student is asking a question, and rather than verbally or non-verbally recognizing this, but deferring her answer, she proceeds with what she is doing without acknowledging the student.

F1 "Pupil ignores teacher question"

Similar to A5 in that student fails either to realize or acknowledge that the teacher has called on him and goes on with what he is doing. The important element here is not to mark F1 if the student simply fails to answer the question in some way. He may, for example, just look down at his desk, or look out the window as a non-verbal device to tell the teacher that he knows he has been called on but doesn't know the answer.

F4 "Pupil laughs"

An F4 laugh should be one that is provoked by the legitimate classroom activity, whether teacher supervised or not. That is, if the teacher or aide is teaching something and a couple of kids are not paying attention at all, but rather are amusing themselves with non-classroom-oriented activity (read: "goofing off"), then resulting laughter does not qualify as an F4. On the other hand, if pupils are involved in

non-supervised learning activities, and in the process of performing their assigned tasks they laugh, this counts as an F4.

S2 "Teacher moves freely"

This element is defined geographically. If the teacher meaningfully moves away from her desk, or from where she typically stations herself for teaching, an S2 is indicated. Movement between where she typically sits or stands and the blackboard or some other teaching device does not count as an S2. If her style is that of a rover, she would get only one S2 per observation period, i.e., a maximum of three ticks per class. The movement must be related to the instructional activity. If the kids are writing at their seats and the teacher leaves the room, closes a window, etc., do not mark S2.

S3 "Pupil moves freely"

The critical element for an S9 is whether or not student movement is teacher initiated or spontaneous. Teacher initiated student movement does not count as an S3, nor does student initiated movement that is corrected or criticized by the teacher. Typical S3s would involve movement to reference or study areas, pencil sharpening, going to the bathroom without having to interrupt for permission, etc.

S5 "Teacher calls pupil dear, etc."

S5s are limited to verbal behavior by the teacher involving the use of affectionate or endearing words such as "mijo," "mi lindo," "mijín," "honey," etc. Individual cases of diminutives used by teachers will have to be decided under the gun, e.g., "Juanito" instead of "Juan," "Bobbie" instead of "Barbara," etc. Conceivably such verbal behavior as is being discussed here could be an S10 more than an S5. Aguilas! "Bobito" may not be a diminutive for "Robert."

S6 "Teacher shows affection for pupil"

In essence, S6 is the non-verbal corollary of S5. Special smiles, warm touches, and other non-verbal but affectionate behavior qualifies here. Perhaps something as remote as the teacher closing a window could be an S6, just in case she has noticed that a student appears to be chilly and spontaneously moves to close it. (N.B. Verbal encouragement does not fit this category, and for better or worse, can only be recorded in the K section.)

S7 "Pupil shows affection for teacher"

Behavior in this category may be either verbal or non-verbal. Descriptors in this category are more difficult to come up with, especially as you move, say, beyond first grade, since while the social role of the teacher allows certain overt behavior that is deliberately affectionate, that of the student is much more constrained. Those of you who have ever had a crush on your teacher will understand this.

S8 "Pupil shows negative affection towards teacher"

"Negative affection" is a euphemism for "hostility." Either verbal or non-verbal behavior qualifies under this category. Be alert for gestures, mumblings, scowls, etc., that the teacher herself might not even be aware of. Also, be aware of students who are grandstanding for their classmates and not really showing hostility towards the teacher.

S9 "Teacher shows negative affection towards pupil"

Note that this is a change in the instrument. As in S8, negative affection is again a euphemism for hostility. A typical S9 would be when the teacher disciplines a student and fails to distinguish between the student as a person and his behavior. That is, a teacher can discipline a student in such a way that she communicates to the student that although she cannot tolerate certain behaviors in the classroom, she nonetheless loves him as a person. A non-supportive reproof might reasonably grow out of an exasperating situation in which the teacher has repeatedly corrected a student to no avail, e.g., an incident involving Juan and Amado in the tape of the Cuban or Puerto Rican teacher who was playing tactile experience with her class. She not only corrected their behavior but she also appeared to be rejecting them as people. A definite no-no.

S10 "Teacher uses sarcasm"

This is also a no-no and usually implies that the teacher is showing some kind of disrespect for her students and their abilities. Remember that sarcasm as a negative factor has to be perceived as negative, and that perception may well vary according to ethnicity of teachers and their classes. What appears to be sarcasm, "playing the dozens," etc., to Anglos and Mexican Americans may be very normal and pedagogically productive if the teacher and all her students are Black. I mention this here only because I observed exactly this situation in a high school class last year. The entire class was spent in repartee, jiving, and put-downs, and was one of the most productive classes I have ever observed. However, it is most unlikely that any of us will encounter such a situation again, so perhaps this entire digression is superfulous. However, it is important to check out how what the observer sees as sarcasm is being received and interpreted by the students.

S11 "Teacher yells"

This one is fairly self explanatory. The one caution here is to be sure to note yelling even though it appears to be part of the basic teaching style of the teacher, and unrelated to discipline, loosing her temper, or whatever else might be associated with yelling in the classroom. There is a teacher I have observed who never talks below a roar, and it is obvious that the students never become accustomed to it, even though it goes on all the time, all period, every day. In a student evaluation of one of this teacher's courses, more than one third of the students recommended that the teacher not yell so much as one way the course could be improved.

K1 "Look or gesture of approval/affection"

Same as S6. The current wisdom says to note any "sincere" non-verbal behavior on the teacher's part. It is all right to note repeated instances of the same supportive teacher behavior as long as these are not "meaningless."

K2 "Pupil supportive (verbal)"

Includes all of S5, plus assorted muy biens, very goods, look-how-well-he-can-do-thats, provided that they are not meaningless and routinely used with no affective or pedagogical value.

K6 "Reproving verbal"

"Reproving" behavior may mean as little as "correcting." Certainly no hostility or negative affection is entailed by the term. As we have noted, it is not difficult to observe one behavior that merits a K6 as well as a K1.

K7 "Reproving look or gesture"

A non-verbal K6. Be on the look out for a K7 immediately followed by a K1. That's a common sequence, again communicating something like "I can't let you go on doing this, but I still love you..."

APPENDIX C

Selected Characteristics of Teachers in
Observed Classrooms

Appendix C: Selected Characteristics of Teachers in Observed Classrooms

Level/Ethnicity/Sex		Spring 73		Fall 73		Spring 74		Fall 74		Spring 75		Fall 74		Spring 76	
		ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP	ESP	COMP
Ethnicity of Teacher															
Elementary:	MA	10	5	6	5	8	5	18	10	17	12	17	9	10	9
	Black	2	1	1	0	2	0	1	0	2	0	2	0	2	0
	Anglo	4	2	5	1	6	3	5	2	5	0	4	1	2	1
Total		16	8	12	6	16	8	24	12	24	12	23	10	14	10
Middle:	MA	5	4	2	1	2	1	1	1	1	1	1	1	7	2
	Black	0	0	0	2	0	2	0	0	0	0	0	0	0	3
	Anglo	3	3	6	5	5	5	1	0	1	0	1	0	3	5
Total		8	7	8	8	7	8	2	1	2	1	2	1	10	10
High:	MA	6	4	5	7	7	7	2	1	2	1	2	1	11	8
	Black	4	3	3	1	1	1	0	0	0	0	0	0	0	4
	Anglo	4	7	6	6	5	5	0	0	0	0	0	0	9	8
Total		14	14	14	14	13	13	2	1	2	1	2	1	20	20
Sex of Teacher															
Elementary:	Male	1	0	0	1	0	0	2	0	1	0	0	1	0	1
	Female	15	8	12	5	16	8	22	12	23	12	23	9	14	9
Total		16	8	12	6	16	8	24	12	24	12	23	10	14	10
Middle:	Male	5	2	4	6	4	5	1	1	1	1	1	1	5	7
	Female	3	5	4	2	3	3	1	0	1	0	1	0	5	3
Total		8	7	8	8	7	8	2	1	2	1	2	1	10	10
High:	Male	8	8	4	7	8	5	1	1	1	1	1	1	9	13
	Female	6	6	10	7	5	8	1	0	1	0	1	0	11	7
Total		14	14	14	14	13	13	2	1	2	1	2	1	20	20

APPENDIX D

Measures Used in Data Analysis

Measures used in Data Analysis

The OScAR 2a and the M/OScAR instruments facilitate the classification of a variety of behavior found in any classroom. By using this instrument and, for the last four semesters, the modified version, M/OScAR, measures of emotional climate, teacher behavior, student behavior and teacher interpersonal styles were available for the analysis. The following is a description of each of these measures:

1. Emotional Climate
   The emotional climate measure is a combined measure comprised of both the teacher behavior measure and the student measure. The score for this measure is derived from seven negative and five positive behavior factors whose occurrence in each of three five minute observation periods is recorded. The measure is a cumulative score over these factors for the three observation periods and the range of the score is -21 to +15.

2. Teacher Behavior
   The teacher behavior measure of the M/OScAR instruments is a cumulative behavior measure of three positive and four negative behavior factors which are noted for occurrence in each of three five minute observation periods. This measure combined with the student behavior measure comprises the emotional climate measure. The teacher behavior factors and their nature (i.e., positive or negative) are as follows:

	Behavior	Nature
1.	Teacher moves freely	positive
2.	Teacher calls pupil dear, etc.	positive
3.	Teacher shows affection for pupil	positive
4.	Teacher ignores pupil's questions	negative
5.	Teacher shows negative affection for pupil	negative
6.	Teacher uses sarcasm	negative
7.	Teacher yells	negative

The possible scores range from +9 to -12.

3. Student Behavior
   The student behavior measure of the M/OScAR instrument is a cumulative behavior measure of two positive and three negative behavior factors which are noted for occurrence in each of five minute observation periods. Along with the teacher behavior measure the student behavior measure comprises part of the emotional climate measure. The five student behavior factors and their nature are as follows:

	Behavior	Nature
1.	Pupil moves freely	positive
2.	Pupil shows affection for the teacher	positive
3.	Pupil ignores the teacher's questions	negative
4.	Pupil laughs	negative
5.	Pupil shows negative affection for teacher	negative

The possible scores for the student behavior measure ranged from +6 to -9.

4. Teacher Interpersonal Styles

The teacher interpersonal styles measure is a cumulative measure of the frequency of the teacher's use of approving or reproving statements or gestures in each of three five minute observation periods. The following are the four categories of the statements and gestures and their nature (which can be either positive or negative):

Category	Nature
1. look or gesture of approval/affection	positive
2. pupil supportive (verbal)	positive
3. reproving verbal	negative
4. reproving look or gesture	negative

The frequencies for the three observation periods were combined for each category and totaled for the positive and negative categories separately. The count for the negative categories was subtracted from the count for the positive categories with the remainder additionally reduced to a range of from -6 to +6 by the following transformation:

Remainder	Score
0	0
1 to 3 (-1 to -3)	1 (-1)
4 to 6 (-4 to -6)	2 (-2)
7 to 9 (-7 to -9)	3 (-3)
10 to 12 (-10 to -12)	4 (-4)
13 to 15 (-13 to -15)	5 (-5)
16 or more (-16 or less)	6 (-6)

The M/OScAR

The modified version of the OScAR was first utilized for the fall semester of 1974. In the M/OScAR, the dimensions of schooling, skill domains emphasis and language usage (oral) indicators were incorporated into the instrument and utilized in the analysis of the program effects. The following is the description of the indicators and of the scoring systems for the measures:

1. Dimensions of Schooling

The dimensions of schooling indices consist of 18 statements concerning teacher or student activities which may occur during the classroom observation period. These 18 statements concerning activities were divided into five categories; study locations, assistance to students, teacher role, teacher focus and selection of materials. Each of these statements were scored for the frequency which they occurred during the classroom observation period. The scoring scale for the frequency of occurrence is as follows:

0	no occurrence
1	little occurrence; occurs but less than 25% of the time
2	occurs some of the time; occurs between 25% and 50% of the time
3	occurs very frequently; occurs more than 50% of the time

A composite index was developed for the Dimensions of Schooling measure by assigning weights to the statements which the instrument developers had considered categories. The weights were assigned within each category so that a form of Likert rating scale resulted, each statement then representing a scale point. The weights were assigned so that the greatest weight was placed on the statement with the closest association to the characteristics of an open classroom. The direction of the assigned weights was made uniform across the five categories so that a meaningful, composite index resulted. The size of the weights also considered the varying number of statements per category. Weighted averages of the scores for each of the statements within a category were computed for each classroom observed. These five scores, one for each of the categories, then were averaged to produce an overall dimensions of schooling score for each classroom observed. The following are the statements for each of the categories and the weights assigned to each statement.

Study Locations	Weight
A. Study and other activities take place at the student's desk.	1/6
B. Study and other activities take place in a number of different locations (centers) within the classroom area.	2/6
C. Study and other activities take place in a number of different locations (centers) within the school..	3/6
Assistance to Students	
A. Students independently seek assistance in their schoolwork from peers or other students.	3/6
B. There is student-to-student assistance on a somewhat formal teacher-initiated basis.	2/6
C. Assistance comes from the teacher.	1/6
Teacher Role	
A. The teacher acts as a resource person to whom students come when seeking information and ideas.	4/10
B. The teacher acts as a discussion leader on topics initiated by the students.	3/10
C. The teacher acts as a discussion leader on topics of his/her choice.	2/10
D. The teacher acts as a presenter of planned lessons.	1/10
Teacher Focus	
A. The teacher directs attention to the class as a whole.	1/6
B. The teacher directs attention to subgroups of the class.	2/6
C. The teacher directs attention to individual students.	3/6

Selection of Materials

A.	Students choose for themselves from all the materials available and may bring in materials from outside the classroom.	5/15
B.	Students choose from alternatives suggested by the teacher.	4/15
C.	Students are assigned materials prescribed for them individually.	3/15
D.	Students are assigned materials prescribed for all members of their subgroup of the class. (Same materials for all students in same subgroup; different materials for each subgroup.)	2/15
E.	Students are assigned materials prescribed for all members of their class. (Same materials for all students in the same class.)	1/15

Analysis was performed on the dimensions of schooling overall measure, on the dimensions of schooling measures for each of the five categories and on the individual statements.

2. Skill Domains

The skill domain component of the M/OScAR instrument was to be utilized to measure the effects of the communications skills project designed and implemented by the ESP program to increase the language arts achievement of the pupils. This component was divided into four domains where the teachers may place emphasis, listening, reading, writing and verbal, and were scored utilizing the following scale:

3	High Emphasis: teacher addresses the skill domain 60 to 100% of the observation period
2	Moderate Emphasis: teacher addresses the skill domain 30 to 59% of the observation period
1	Low Emphasis: teacher addresses the skill domain up to 29% of the observation period, and
0	None: teacher did not address the skill domain during the observation period

3. Language Usage (Oral)

This component of the instrument was incorporated into M/OScAR to measure the classroom language usage of English, Spanish or of an equal mixture of both in the normal classroom environment. Both instructional and non-instructional interchanges initiated by the teacher and directed toward the pupils, among the pupils, and initiated by the pupils and directed toward the teacher were recorded for each of three five minute observation periods.

For the analysis of the differences between the occurrence of the interchanges in the classrooms of the ESP schools and of the comparison schools, the classrooms for which the language of instruction was the same, i.e., Spanish and English or English only, the occurrences were compared. For each combination of type of interchange and language used in the interchange, the

number of classrooms in which this interchange occurred in one or more of the five minute periods in the ESP school was compared with the number of classrooms in which this interchange occurred in the comparison schools. This analysis was performed for the school levels and semesters in which 10 or more classrooms used the same language of instruction.